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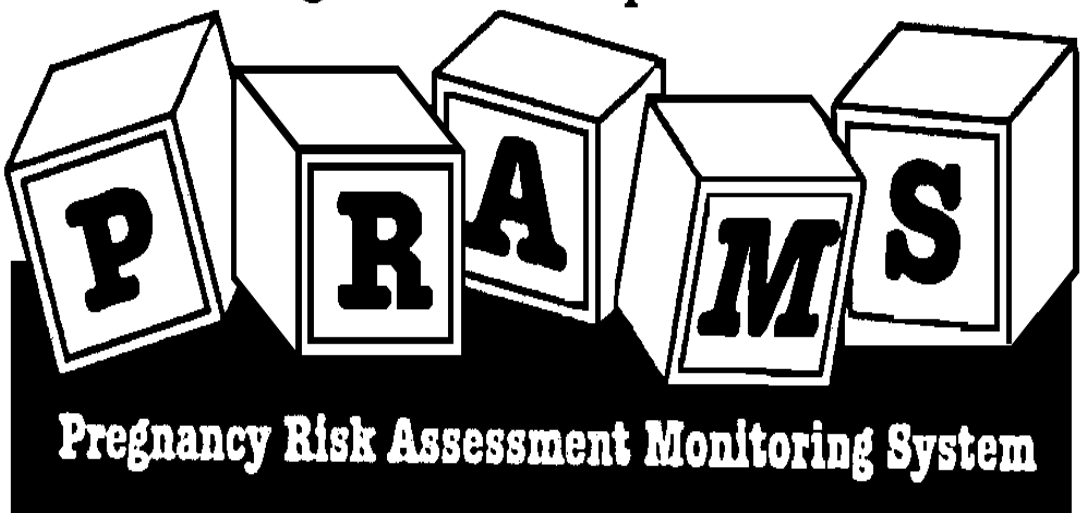

1996-1998 Surveillance Report

Folic Acid Awareness

Pregnancy Intention and Birth Control Use

Prenatal Care

Hospital Stays for Labor and Delivery

Breast-feeding

Washington State Department of Health

1996-1998 Washington State Pregnancy Risk Assessment Monitoring System (PRAMS) Surveillance Report

July, 2001

Community and Family Health

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TABLE OF CONTENTS

5. Hospital Stay for Labor and Delivery

6. Breast-Feeding

7. Appendices

List of Data Tables and Figures

Prenatal Care Provider Discussion of Birth Control Methods to Use After Pregnancy

Health Care Provider Discussion of Birth Control Methods to Use After Birth of Baby

4. Prenatal Care

Timing of Confirmation of Pregnancy Status

Timing of First Prenatal Care Visit

Executive Summary

Since June of 1993, the Office of Maternal and Child Health (MCH), Washington State Department of Health (DOH) has been collecting Pregnancy Risk Assessment Monitoring System (PRAMS) data.[1] PRAMS is an ongoing, population-based surveillance system sponsored by the Centers for Disease Control and Prevention (CDC) and designed to generate state-specific data on maternal behaviors and experiences before, during, and after pregnancy among residents who delivered live-born infants.[2] We are pleased to present the first of four volumes of the 1996-1998 Washington State PRAMS surveillance report, a collection of PRAMS findings on various MCH indicators.

Volume One of the 1996-1998 Washington State PRAMS Surveillance report provides information on MCH indicators relative to folic acid awareness, pregnancy intention and birth control use, prenatal care, hospital stays for labor and delivery, and breast-feeding. Subgroup analyses are stratified by selected maternal characteristics; results from these analyses are displayed in graphic and tabular form. For certain topics 5-year trends are also presented.

The 1996-1998 Washington State PRAMS Surveillance Report was designed to serve as a descriptive review of the pregnancy and early postpartum experience of 6,034 women in Washington State who had live births from April 1996 through December 1998. The average response rate for this study period was approximately 70 percent, which is considered by PRAMS operational and technical staff at the CDC as a minimum threshold below which unacceptable response bias may occur. When a response rate drops below this threshold, state data is not included in national estimates. This report will also serve as a source of information for public health professionals and policy makers in developing and monitoring programs and policies designed to improve the health of mothers and children in Washington State.

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[1] Pregnancy Risk Assessment Monitoring System (PRAMS) Surveillance Report: 1993-1994. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1996.

[2] Colley GB, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1999.

Data Highlights

The following are important findings on each of the five topic areas featured in Volume One of the 1996-1998 Washington State PRAMS Surveillance Report:

Folic Acid Awareness

- Approximately 70.4 percent of women said they had heard or read that taking folic acid could prevent some birth defects.

Pregnancy Intention and Birth Control Use

- Regarding the mother's pregnancy intention just prior to conception, an estimated 37.1% of women reported they either wanted to be pregnant later or did not want to be pregnant then or at any time in the future.
- In terms of the father's pregnancy intention just prior to conception, over one-quarter (26.2%) of women said their husband or partner wanted the pregnancy later or did not want the pregnancy then or at any time in the future.
- In regards to the father's pregnancy intention during the 12 months before delivery, an estimated 10.5 percent of women reported their husband or partner did not want the pregnancy.
- Approximately 21.5 percent of women reported using birth control at conception.
- The most common reason why women reported they did not use birth control at time of conception was because they wanted to get pregnant (62.3%).
- The proportion of women who reported using birth control at postpartum (at time of survey) was 79.6 percent.
- The most frequently stated reason why women reported they did not use birth control at postpartum was because they were not having sex (38.6%).
- Eighty-five percent of women said a prenatal care provider discussed birth control methods to use after pregnancy.
- An estimated 87.3 percent of women said a health care provider discussed using birth control after their baby was born.

Prenatal Care

- The proportion of women who reported their pregnancy status was confirmed by a test, doctor, or nurse in the first trimester was 95.2 percent.
- Nearly eighty percent (78.1%) of women reported having their first prenatal care visit in the first trimester.
- Eighty-one percent of women received prenatal care as soon as they desired.
- The most common barrier to receiving early prenatal care services, as reported by the mother, was not being able to obtain an earlier appointment (28.6%).
- Approximately 60.3 percent of women went to a private doctor's office for their prenatal care visits.

Hospital Stays for Labor and Delivery

- The proportion of women who stayed in the hospital 24 hours or less after delivery was 46.4 percent.

Breast-feeding

- At postpartum, 86.5 percent of women initiated breast-feeding. Seventy-three percent of women breast-fed for one month postpartum, 62.8 percent breast-fed for two months postpartum.
- Approximately 86.9 percent of women said a prenatal care provider discussed breast-feeding.

Introduction

The Pregnancy Risk Assessment Monitoring System (PRAMS) is part of the Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birth weight.[1] PRAMS is an ongoing, population-based surveillance system administered by the Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion at the CDC in conjunction with various state programs.[2,3] In 1987, PRAMS was designed to identify and monitor selected self-reported maternal behaviors and experiences that occur before, during and after pregnancy and the child's early infancy among a stratified sample of mothers delivering a live-born infant.[1,3] PRAMS was also designed to supplement vital records data and to generate state-specific data for developing and assessing Maternal and Child Health (MCH) programs on a state level.[3]

Since June of 1993, the Office of MCH within the Washington State Department of Health has been collecting PRAMS data. Each month, 1 in 40 births are randomly selected from the Washington State birth certificates. At two to six months postpartum, Washington State PRAMS sends a packet containing an explanatory letter and the PRAMS questionnaire to 100-250 sampled mothers. Ten days after the initial mailing, mothers are sent a reminder letter to serve as a thank you. Mothers who do not respond to the first mailing are sent a second mail questionnaire packet two weeks after the reminder letter. Washington State PRAMS staff contacts the mothers who do not respond to the mail survey two weeks after the second mailing of the questionnaire and attempt to conduct telephone interviews in English or Spanish.[2,3]

In December of 1996, Washington State published the first PRAMS report that summarized information from mothers who delivered infants in Washington State from April 1993 through December 1994.[3] This current report is the first of four volumes of the 1996-1998 Washington State PRAMS Surveillance Report, a compilation of PRAMS data on MCH indicators on 6,034 randomly selected mothers who delivered live born infants in Washington State from April 1996 through December 1998. This sample represents a 70 percent response rate of 8,563 women surveyed during Phase III of the PRAMS survey. For additional information regarding the sampling plan for Washington State PRAMS, please refer to Appendix B.

Volume One covers the following topics: folic acid awareness, pregnancy intention and birth control use, prenatal care, hospital stays for labor and delivery, and breast-feeding. This report includes the characteristics of the PRAMS sample population, response rates, data highlights, five narrative sections presenting the public health importance of each topic, prevalence estimates and subgroup analyses by selected maternal characteristics, and trends. An analysis of each survey question is presented in graphic and tabular form.

For this report, responses to the PRAMS questions are stratified by the following maternal characteristics obtained from the Washington State birth certificates: age at conception (<20, 20-24, 25-34, 35+ years), race/ethnicity (White/Other/Unknown, African American, Native American, Asian/Pacific Islander, and Hispanic ethnicity), level of education at birth (<12, 12,

>12years), marital status at time of birth (married, unmarried), and birth weight (< 2500, grams, ≥ 2500 grams). Washington State PRAMS oversampled African Americans, Native Americans, Asian Pacific Islanders, and ethnic Hispanics to create (along with whites) five strata. The purpose of oversampling was to increase the reliability of estimates for these minority groups. All women less than 20 years of age were grouped in the same strata due to insufficient numbers to support finer divisions of age groups delineation. The level of education was selected as a stratification variable, because it has been found to be an excellent surrogate for socio-economic status. Marital status is another important stratification variable, particularly with respect to pregnancy intentions.[2] Table 1.1 (pg. 21) provides the demographic characteristics of sample participants from all state births in this time period.

Information on whether Medicaid paid for prenatal care services for the mother and delivery of the infant was obtained from the linkage between the Washington State PRAMS data and the Washington State First Steps Database (maintained by the Department of Social and Health Services, Research and Data Analysis Division). Women who meet the Medicaid criteria were divided into four groups: Grant Recipient, Medicaid Only, Medicaid Expansion, and Non-Medicaid. "Grant Recipients" is defined as very low-income women eligible for cash assistance and Medicaid. "Medicaid Only" is defined as low-income women eligible for Medicaid only; this group includes women not eligible for cash assistance. "Medicaid Expansion" is defined as women eligible for Medicaid with incomes at or below 185 percent of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups. "Non-Medicaid recipients" is defined as women whose income is above 185 percent of the federal poverty level or had not applied for Medicaid. For this report, responses to PRAMS questions were stratified by Medicaid total (Grant Recipient, Medicaid Only and Medicaid Expansion) and Non-Medicaid. Information on Medicaid status involvement is important both as an indicator of poverty status and it's many attendant health risks, and because the expansion of Medicaid funding for pregnant women in Washington State has been a major component of MCH policy.[2]

For some topics, responses to PRAMS questions are stratified by site of prenatal care visit (Hospital Clinic, Health Department Clinic, Private Doctor's Office, Military Facility Clinic, Community or Migrant Health Clinic, and Other Clinic). This information is obtained from mother's response to the PRAMS survey question: "Where did you go ***most of the time*** for the prenatal visits?"

All tables in the report were produced using weighted PRAMS data. Percentages and standard errors were calculated for the characteristic of interest using PROC CROSSTAB in SUDAAN.[3] The 95% Confidence Intervals (CIs) were computed using the formula CI = percentage + 1.96 * standard error. The sample size, reported in each table, is the number of mothers who answered the corresponding PRAMS question.

All missing (blank and "don't know") observations are excluded. The percentage of missing values is noted when it equals or exceeds 10 percent. Because estimates based on small sample size are imprecise and may be biased, estimates where the underlying number of respondents was fewer than 60 are noted in the table as "may not be reliable." Respondents fewer than 30 are not reported and are noted in the tables.

Further information on PRAMS can be found in the appendices. Appendix A describes the Washington State PRAMS data collection instrument and procedures. Appendix B explains the Washington State PRAMS sampling and weighting process. Appendix C displays the trend data for questions that were asked in Phase II (January 1994 through March 1996) and Phase III (April 1996 through December 1998) of the PRAMS questionnaire. Appendix D lists the topics for Volume I-IV, the states participating in PRAMS from April 1996 through December 1998, and the web sites to CDC, Washington State PRAMS, and Washington State Department of Health.

This report has been prepared by technical and program staff of the Office of Maternal and Child Health section in the Community and Family Health Division at the Washington State Department of Health. It is hoped that the PRAMS data presented in this surveillance report can be used by public health professionals and policy makers to design and implement interventions and policies to improve the long-term health of the mother and infant. In addition, this report may also assist in completing the requirements for Title V MCH Block Grant applications, as well as generating hypotheses to be explored in future studies.

References:

[1] Pregnancy Risk Assessment Monitoring System (PRAMS) CDC Model Surveillance Protocol 1999. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1996.

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Table 1.1: Demographic Characteristics of Washington State Resident Birth Mothers

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	State Total	% State Total	WA PRAMS Total	WA PRAMS %Total[b]
Total[c]	217,205	100.0	6,034	100.0
Maternal Age				
<20 years	23,838	11.0	1,021	13.7
20-24 years	51,667	23.8	1,557	23.2
25-34 years	112,137	51.6	2,876	52.7
35+ years	29,474	13.6	579	10.4
Race/Ethnicity[d]				
White	157,471	72.5	1,410	74.9
African American	7,925	3.7	969	3.8
Native American	4,600	2.1	1,252	2.2
Asian/Pacific Islander	13,959	6.4	1,208	6.7
Hispanic	26,267	12.1	1,195	12.4
Maternal Education[e]				
<12 years	35,302	18.1	1,323	17.9
12 years	61,869	31.7	1,717	32.1
>12 years	98,002	50.2	2,331	49.9
Marital Status				
Married	157,168	72.4	3,842	72.7
Unmarried	59,527	27.4	2,181	27.3
Medicaid Status				
Medicaid[f]	90,319	41.8	3,201	40.3
Grant Recipients[g]	31,707	14.7	1,137	13.1
Medicaid Only[h]	23,875	16.1	1,266	16.5
Medicaid Expansion[i]	34,689	11.0	798	10.8
Non-Medicaid[j]	125,865	58.2	2,817	59.7
Birthweight Status (grams)				
Low Birthweight (<2500 g)	12,207	5.6	355	5.0
Normal Birthweight (≥2500 g)	204,422	94.4	5,664	95.0
Site of Prenatal Care Visit				
Hospital Clinic	-[k]	-[k]	1,594	19.9
Health Department Clinic	-[k]	-[k]	523	5.7
Private Doctor's Office	-[k]	-[k]	2,731	60.3
Military Facility	-[k]	-[k]	240	3.5
Community or Migrant Health Center	-[k]	-[k]	252	2.9
Other Clinic	-[k]	-[k]	530	7.7

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]Refers to surveillance period from April 1996 through December 1998.

[d]Hispanic Ethnicity was not noted on 3.2% of the Washingtron State birth certificates.

[e]10% or more of the maternal education data is missing from birth certificate data.

[f]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

[g]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

[h]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

[i]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

[j]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

[k]Information not available from Washington State birth certificates.

FOLIC ACID AWARENESS

WASHINGTON STATE PRAMS 1996-1998

Folic Acid Awareness

Each year in the United States, an estimated 4000 pregnancies are affected by neural tube defects (NTDs) including: anencephaly, spina bifida, and encephalocele.[1] Multiple studies have established that daily intake of folic acid before conception and during the first trimester can reduce the occurrence of neural tube defects by at least 50 percent.[2,3] Regular daily intake of folic acid among women of childbearing age is a way to prevent these defects, as approximately half of pregnancies in the United States are unplanned and neural tube closure occurs during the first four weeks of gestation,[3] before many women recognize they are pregnant. Recent research has indicated that folic acid supplementation may also reduce the incidence of other birth defects[4] and preterm delivery.[5]

In 1992, the United States Public Health Service (PHS) recommended that all women of childbearing age who are capable of becoming pregnant consume 400 micrograms of folic acid daily.[6] According to a 1998 poll, 70 percent of women aged 18 to 45 years still are not following the PHS recommendation.[1] However, awareness of folic acid has increased from 1995 to 1997. According to the March of Dimes 1997 survey, 68 percent of women reported having ever heard of or read about folic acid, a 31 percent increase from 52 percent in 1995.[1]

Washington State PRAMS data can be used to monitor women's awareness of the relationship between folic acid consumption[7] and birth defects and to determine where changes in nutrition awareness programs may be needed.

References:

[1] CDC. Knowledge and Use of Folic Acid by Women of Childbearing Age – United States, 1995 and 1998. MMWR 1999;48:325-327.

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[5] Scholl TO, Hediger ML, Scholl JI, et al.: Dietary and Serum Folate: Their Influence on the Outcome of Pregnancy. American Journal of Clinical Nutrition 1996; 63: 520-525.

[6] CDC. Recommendation for the Use of Folic Acid to Reduce the Number of Cases of Spina Bifida and Other Neural Tube Defects. MMWR 1992; 41(No. RR – 14).

[7] Gilbert BC, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Diseased Control and Prevention, 1999.

Survey Question 20:

Have you ever heard or read that taking the vitamin folic acid can help prevent some birth defects?

No (29.6%)

Yes (70.4%)

Summary of Results:

Folic Acid Awareness (Table 2.1 & Figure 2.1)

- The proportion of women who reported having heard or read that folic acid could prevent some birth defects was 70.4 percent. These women were more likely to be:
  - 25 years of age or older
  - White
  - Women with more than a high school education
  - Married
  - Non-Medicaid recipients

- There was no significant relationship between folic acid awareness and the infant's birth weight status.

Table 2.1: Women who reported having heard or read that folic acid could prevent some birth defects

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n=5,956)	Yes (n=3,562)	% Yes[b] (%=70.4)	95% CI (68.6-72.2)
Maternal Age				
< 20 years	1,012	445	49.4	(43.9-54.9)
20-24 years	1,528	873	64.9	(61.2-68.6)
25-34 years	2,844	1,844	76.6	(74.4-78.8)
35+ years	571	400	79.1	(74.4-83.8)
Race/Ethnicity				
White	1,403	1,084	76.4	(74.2-78.6)
African American	953	507	51.7	(48.8-54.6)
Native American	1,240	696	54.3	(51.9-56.7)
Asian/Pacific Islander	1,186	696	57.2	(54.5-59.9)
Hispanic	1,174	579	48.7	(46.0-51.4)
Maternal Education[c]				
<12 years	1,306	569	48.4	(43.7-53.1)
12 years	1,691	932	64.9	(61.4-68.4)
>12 years	2,315	1,728	84.3	(82.1-86.5)
Marital Status				
Married	3,799	2,523	76.1	(74.1-78.1)
Unmarried	2,146	1,034	55.3	(51.6-59.0)
Medicaid Status				
Medicaid[d]	3,150	1,546	55.0	(52.1-57.9)
Grant Recipients[e]	1,119	516	55.2	(49.7-60.7)
Medicaid Only[f]	1,245	600	51.8	(47.3-56.3)
Medicaid Expansion[g]	786	430	59.4	(53.9-64.9)
Non-Medicaid[h]	2,790	2,009	80.8	(78.8-82.8)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	351	203	67.0	(58.8-75.2)
Normal Birthweight (≥2500 g)	5,590	3,351	70.6	(68.8-72.4)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database.
Missing responses =78. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

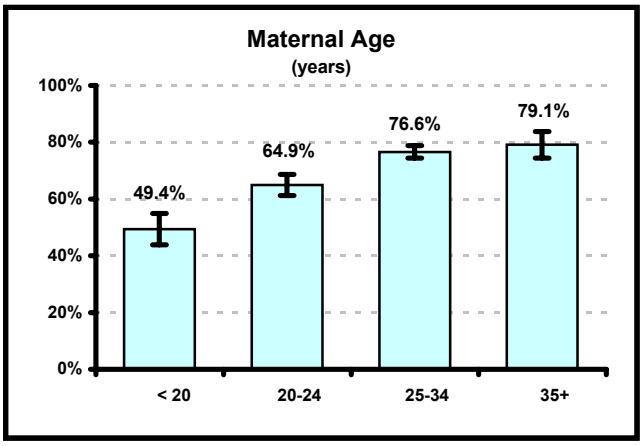
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

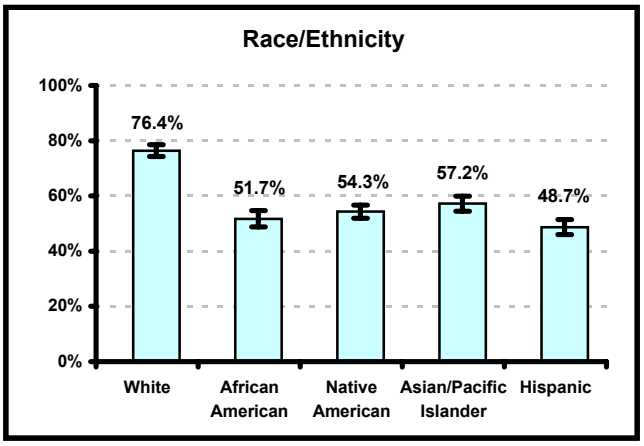
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

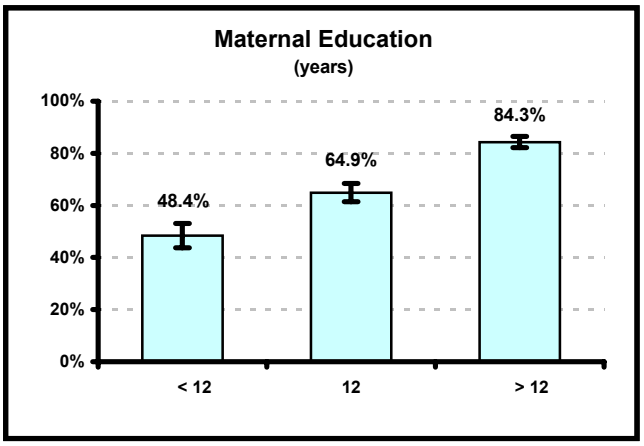
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

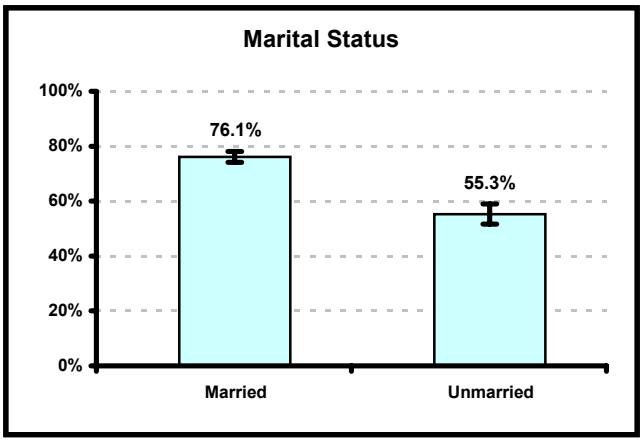
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

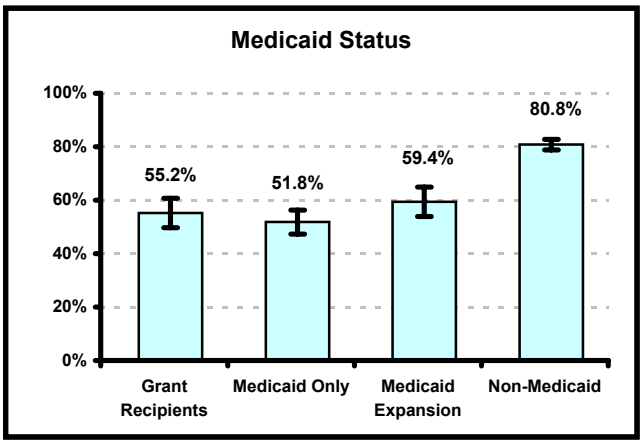
Figure 2.1: Women who reported having heard or read that folic acid could prevent some birth defects
Washington State PRAMS 1996-1998

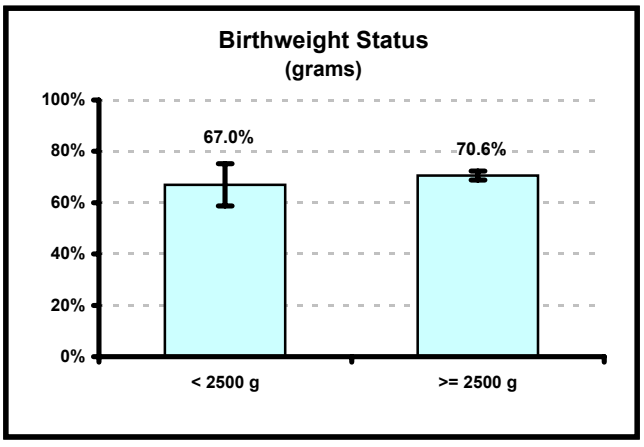












PREGNANCY INTENTION AND BIRTH CONTROL USE

WASHINGTON STATE PRAMS 1996-1998

Pregnancy Intention and Birth Control Use

Unintended pregnancies are defined as pregnancies that a woman wanted to have occur later in her life or not at all.[1] In the United States, unintended pregnancies are common among all population subgroups.[2,3] However, the risk of having an unintended pregnancy is more prevalent among teenagers, women aged 40 years or older, women with a lower education level, unmarried women, and women with a low income.[4,5,6,7]

Several studies have shown that unintended pregnancy is associated with adverse maternal behaviors, such as poor maternal nutrition, cigarette smoking, alcohol use and illicit drug use.[2,3] Women with unintended pregnancies resulting in a live birth are less likely to obtain early prenatal care because they may not realize that they are pregnant during the first trimester.[8,9] It is also well-established in the literature that unintended pregnancy is associated with lower rates of breast-feeding initiation and breast-feeding duration, and higher rates of child abuse and child neglect, as well as delayed cognitive, behavioral, and emotional development among children.[2,3,9,10]

An unintended pregnancy may result from inconsistent, improper or no use of birth control methods.[1] Washington State PRAMS data can be used to monitor trends in improved access to family planning services, women's knowledge about their reproductive health, and proper and consistent use of effective birth control methods.[2,3,4] In addition, this information can be used to monitor state-wide progress in reducing the percentage of unintended pregnancies to 30 percent, the *Healthy People 2010* goal.[11]

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[1] Gilbert CB, Johnson CH, Morrow B, Ahluwahlia IB, Gaffield ME, Fisher L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1999.

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[8] CDC. Unintended Childbearing: Pregnancy Risk Assessment Monitoring System – Oklahoma, 1988-1991. MMWR 1992; 41: 933-6.

[9] Kost K, Landry DJ, Darroch JE. Predicting maternal behaviors during pregnancy: does intention status matter? Fam Plann Perspect 1991; 23: 212-21.

[10] Baydar N. Consequences for children of their birth planning status. Fam Plann Perspect 1995; 27: 288-34.

[11] U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington, DC: January 2000.

Survey Question #5:

Thinking back to ***just before*** you got pregnant, how did you feel about becoming pregnant?

I wanted to be pregnant sooner (20.9%)

I wanted to be pregnant later (29.3%)

I didn't want to be pregnant then or at any time in the future (7.9%)

I wanted to be pregnant then (42.0%)

I don't know

Summary of Results:

Mother's Pregnancy Intention Just Prior to Conception (Table 3.1 & Figure 3.1)

- In reference to the mother's pregnancy intention just prior to conception, an estimated 37.1 percent of women reported they wanted to be pregnant later or did not want to be pregnant then or at any time in the future. These women were more likely to be:
  - Teenagers
  - African Americans
  - Women with less than 12 years of education
  - Unmarried
  - Medicaid recipients (specifically Grant recipients)

- Women who reported they wanted to be pregnant later or did not want to be pregnant then or at any time in the future did not deliver infants that differed significantly by the infant's birth weight status.
- From January 1994 through December 1998, the data shows no significant change in the proportion of women who reported they wanted to be pregnant later or did not want to be pregnant then or at any time in the future (Refer to Table 8.1 in Appendix C for details.)

Table 3.1: Regarding the mother's pregnancy intention just prior to conception, women who reported they wanted to be pregnant later or did not want to be pregnant then or at any time in the future[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n=5,597)	Yes (n=2,387)	% Yes[c] (%=37.1)	95% CI (35.1-39.1)
Maternal Age				
<20 years	918	620	65.3	(60.0-70.6)
20-24 years	1,453	722	45.6	(41.5-49.7)
25-34 years	2,701	894	29.8	(27.3-32.3)
35+ years	524	150	19.7	(15.0-24.4)
Race/Ethnicity				
White	1,335	456	35.1	(32.6-37.6)
African American	906	503	57.0	(53.9-60.1)
Native American	1,124	554	50.5	(48.0-53.0)
Asian/Pacific Islander	1,104	423	39.6	(36.9-42.3)
Hispanic	1,128	451	40.3	(37.6-43.0)
Maternal Education[d]				
<12 years	1,192	613	52.1	(47.4-56.8)
12 years	1,578	756	41.6	(37.9-45.3)
>12 years	2,215	764	28.6	(25.9-31.3)
Marital Status				
Married	3,632	1,163	27.2	(25.0-29.4)
Unmarried	1,954	1,221	65.1	(61.4-68.8)
Medicaid Status				
Medicaid[e]	2,891	1,520	53.1	(50.0-56.2)
Grant Recipients[f]	1,008	612	61.1	(55.4-66.8)
Medicaid Only[g]	1,141	571	51.2	(46.5-55.9)
Medicaid Expansion[h]	742	337	46.6	(40.7-52.5)
Non-Medicaid[i]	2,691	856	26.7	(24.3-29.1)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	318	140	36.3	(27.1-45.5)
Normal Birthweight (>2500 g)	5,264	2,238	37.1	(35.1-39.1)

[a]"I don't know" observations were excluded from PRAMS analyses.

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database. Missing responses =437. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage Weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the Maternal Education data is missing from birth certificate data.

[e]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

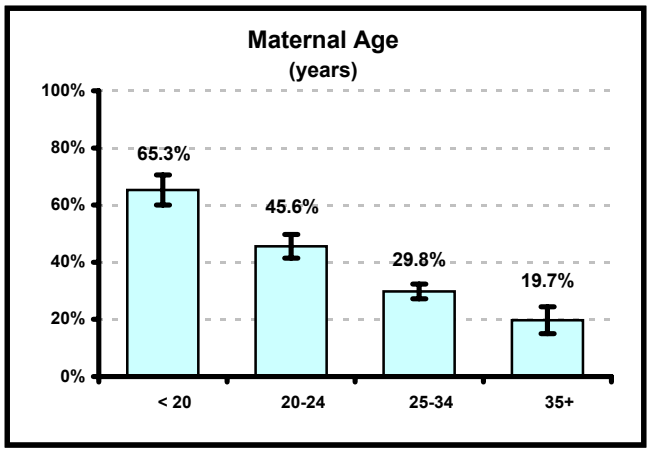
[f]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

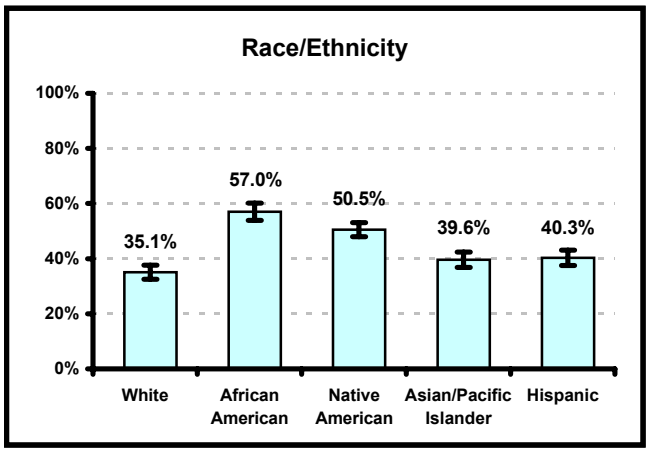
[g]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

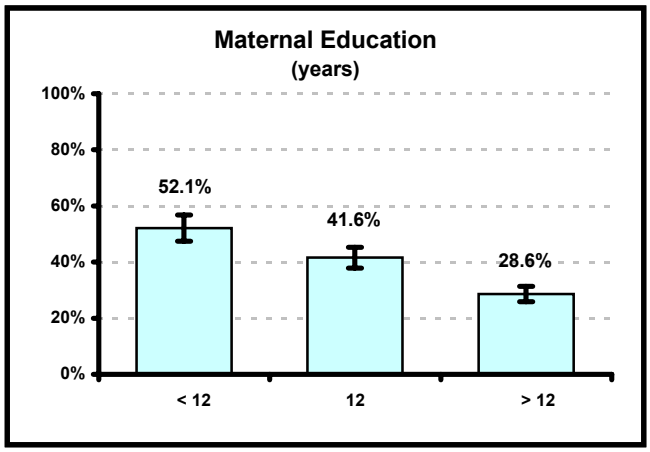
[h]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

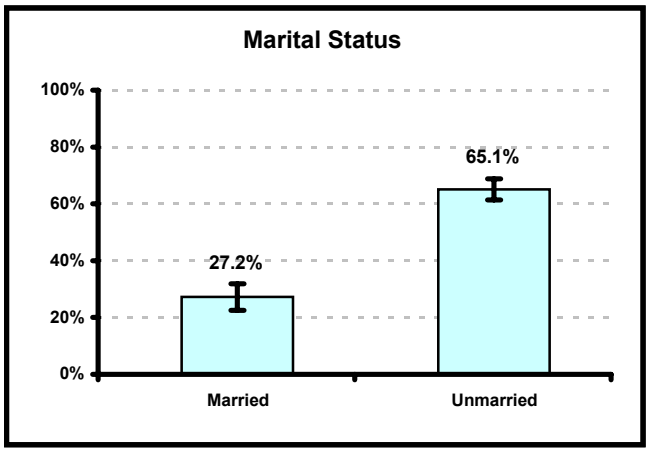
[i]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

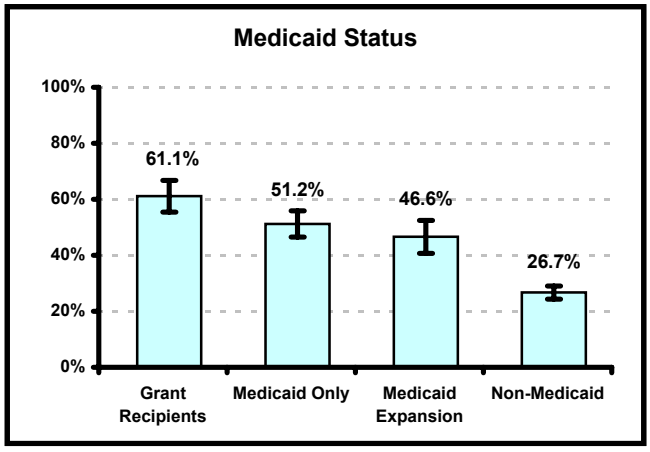
Figure 3.1: Regarding the mother's pregnancy intention just prior to conception, women who reported they wanted to be pregnant later or did not want to be pregnant then or at any time in the future
Washington State PRAMS 1996-1998

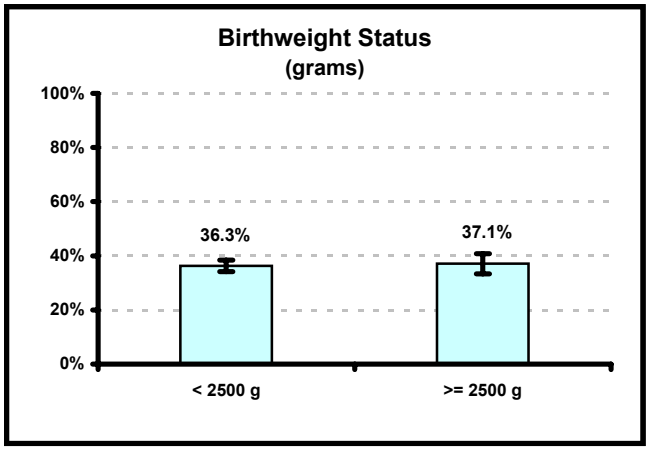












Survey Question #53 [Washington State-Added PRAMS Question]:

Thinking back to just before you got pregnant, how did your husband or partner feel about you becoming pregnant?

My husband or partner wanted me to be pregnant then (44.5%)

My husband or partner wanted me to be pregnant sooner (11.0%)

My husband or partner wanted me to be pregnant later (18.4%)

My husband or partner didn't want me to be pregnant then or at any time in the future (7.8%)

It didn't matter to my husband or partner when I became pregnant (16.6%)

I don't know

I didn't have a husband or partner (1.7%)

Summary of Results:

Father's Pregnancy Intention Just Prior to Conception (Table 3.2 & Figure 3.2)

- Relative to the father's pregnancy intention just prior to conception, over one-quarter (26.2%) of women said their husband or partner wanted them to be pregnant later or did not want them to be pregnant then or at any time in the future. These women were more likely to be:
  - Teenagers
  - Women with less than 12 years of education
  - Unmarried
  - Medicaid recipients

- African American women (31.3%) were significantly more likely to report that their husband or partner wanted them to be pregnant later or did not want them to be pregnant then or at any time in the future than Asian/Pacific Islander women (24.4%) or White women (25.7%).
- Women who reported their husband or partner wanted them to be pregnant later or didn't want them to be pregnant then or at any time in the future did not differ significantly by the infant's birth weight status.

Table 3.2: Regarding the father's pregnancy intention just prior to conception, women who reported their husband or partner wanted the pregnancy later or did not want the pregnancy then or at any time in the future[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n=5,645)	Yes (n=1,534)	% Yes[c] (%=26.2)	95% CI (24.4-28.0)
Maternal Age				
<20 years	904	359	46.0	(40.3-51.7)
20-24 years	1,452	448	30.1	(26.2-34.0)
25-34 years	2,747	625	21.6	(19.2-24.0)
35+ years	542	102	16.3	(11.8-20.8)
Race/Ethnicity				
White	1,354	338	25.7	(23.3-28.1)
African American	883	270	31.3	(28.4-34.2)
Native American	1,153	342	31.0	(28.6-33.4)
Asian/Pacific Islander	1,137	268	24.4	(21.9-26.9)
Hispanic	1,118	316	28.3	(25.8-30.8)
Maternal Education[d]				
<12 years	1,195	374	35.2	(30.5-39.9)
12 years	1,587	467	28.2	(24.7-31.7)
>12 years	2,242	514	21.4	(18.9-23.9)
Marital Status				
Married	3,696	778	20.1	(18.1-22.1)
Unmarried	1,940	754	43.9	(40.0-47.8)
Medicaid Status				
Medicaid[e]	2,914	951	35.3	(32.4-38.2)
Grant Recipients[f]	1,005	351	36.0	(30.3-41.7)
Medicaid Only[g]	1,157	357	34.3	(29.8-38.8)
Medicaid Expansion[h]	752	243	35.8	(30.1-41.5)
Non-Medicaid[i]	2,716	572	20.2	(18.0-22.4)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	331	96	24.3	(16.7-31.9)
Normal Birthweight (>2500 g)	5,300	1,432	26.3	(24.3-28.3)

[a]"I don't know" observations were excluded from PRAMS analyses.

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database

Missing responses = 389. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage Weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the Maternal Education data is missing from birth certificate data.

[e]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

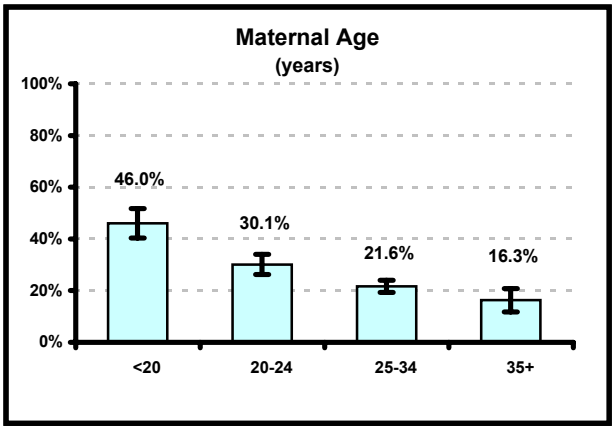
[f]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

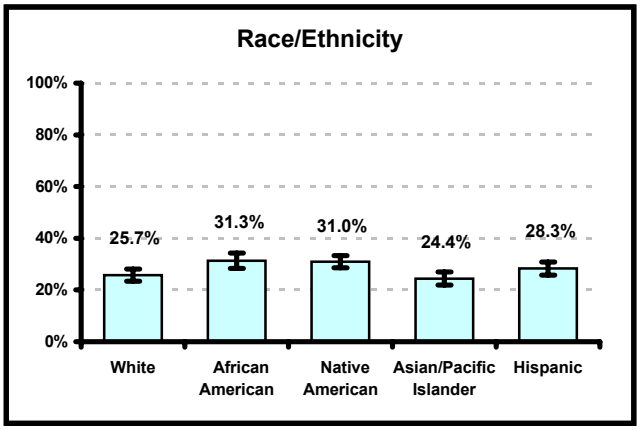
[g]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

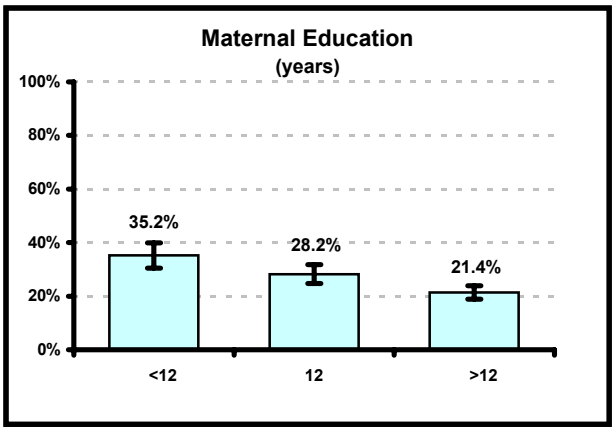
[h]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

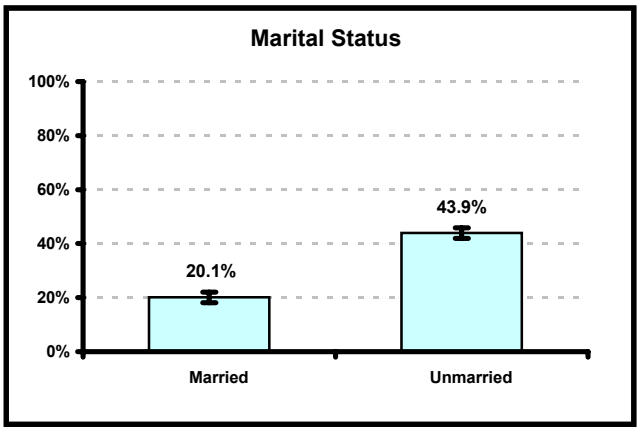
[i]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

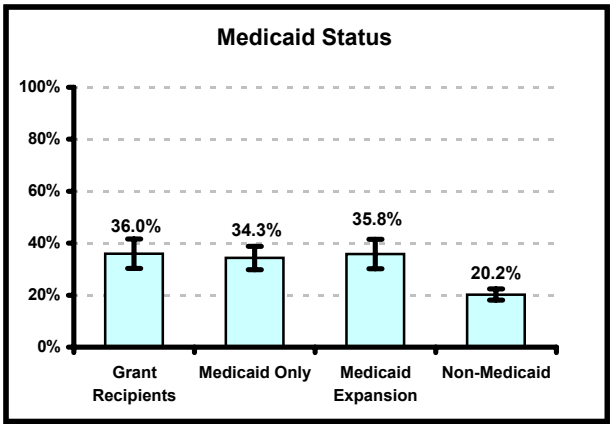
Figure 3.2: Regarding the father's pregnancy intention just prior to conception, women who reported their husband or partner wanted the pregnancy later or did not want the pregnancy then or at any time in the future
Washington State PRAMS 1996-1998

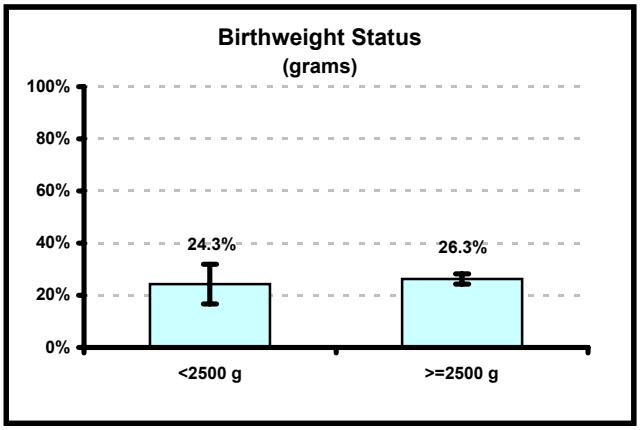












Survey Question 30h:

This question is about things that may have happened during the ***12 months before you delivered*** your new baby. Your husband or partner said he did not want you to be pregnant?

No (89.5%)

Yes (10.5%)

Summary of Results:

Father's Pregnancy Intention During the 12 Months Before Delivery (Table 3.3 & Figure 3.3)

- Concerning the father's pregnancy intention during the 12 months before delivery, nearly eleven percent (10.5%) of women said their husband or partner did not want the pregnancy. These women were more likely to be:
  - Teenagers
  - African American
  - Women with less than 12 years of education
  - Unmarried
  - Medicaid recipients (specifically Grant recipients)

- There was no significant relationship between women who said their husband or partner did not want the pregnancy during the 12 months before delivery and the infant's birth weight status.

Table 3.3: Regarding the father's pregnancy intention during the 12 months before delivery, women who reported their husband or partner did not want pregnancy

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n=5,967)	Yes (n=709)	% Yes[b] (%=10.5)	95% CI (9.3-11.7)
Maternal Age				
<20 years	1,004	186	18.4	(14.1-22.7)
20-24 years	1,537	198	13.1	(10.4-15.8)
25-34 years	2,852	270	7.7	(6.3-9.1)
35+ years	573	58	9.0	(5.5-12.5)
Race/Ethnicity				
White	1,401	138	10.2	(8.6-11.8)
African American	958	168	18.3	(15.9-20.7)
Native American	1,240	191	16.0	(14.2-17.8)
Asian/Pacific Islander	1,194	94	8.3	(6.7-9.9)
Hispanic	1,174	118	10.4	(8.6-12.2)
Maternal Education[c]				
<12 years	1,301	196	13.7	(10.4-17.0)
12 years	1,699	213	12.2	(9.7-14.7)
>12 years	2,314	209	8.3	(6.5-10.1)
Marital Status				
Married	3,812	257	5.9	(4.7-7.1)
Unmarried	2,144	451	23.0	(19.7-26.3)
Medicaid Status				
Medicaid[d]	3,151	482	14.7	(12.5-16.9)
Grant Recipients[e]	1,118	231	19.6	(15.1-24.1)
Medicaid Only[f]	1,247	163	12.9	(9.8-16.0)
Medicaid Expansion[g]	786	88	11.7	(8.0-15.4)
Non-Medicaid[h]	2,800	221	7.6	(6.2-9.0)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	351	45	10.5	(5.0-16.0)
Normal Birthweight (≥2500 g)	5,601	663	10.6	(9.2-12.0)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database. Missing responses = 67. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage Weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the Maternal Education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

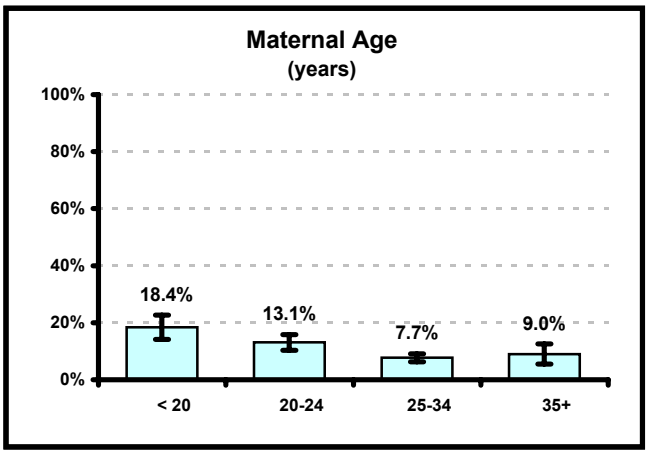
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

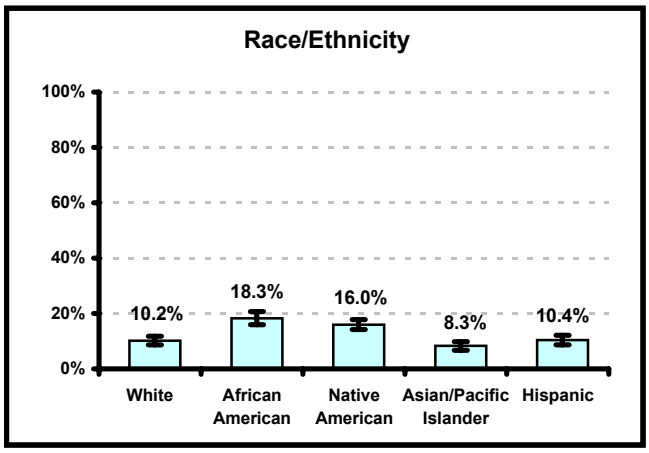
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

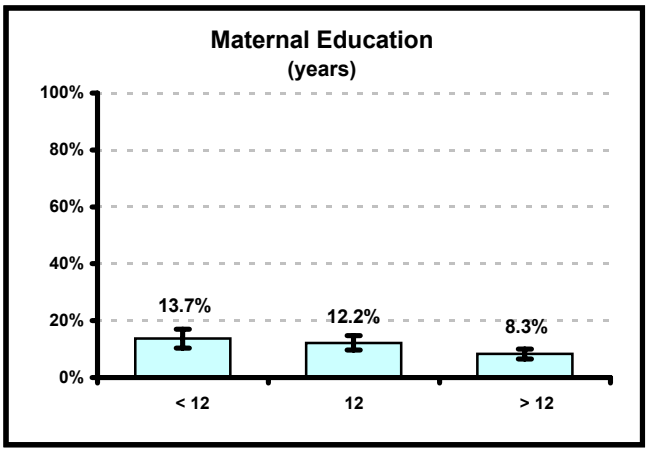
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

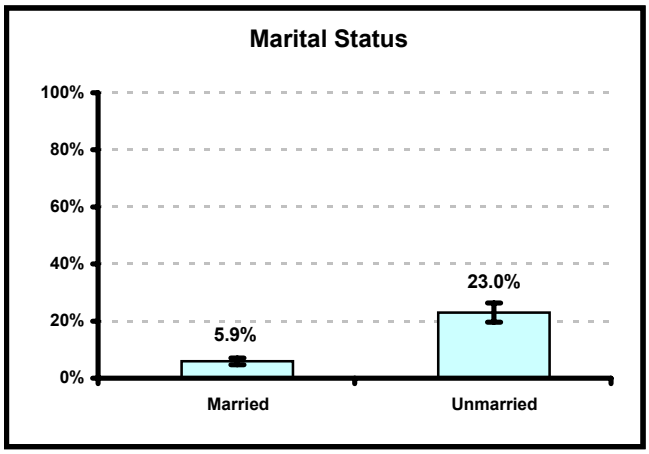
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

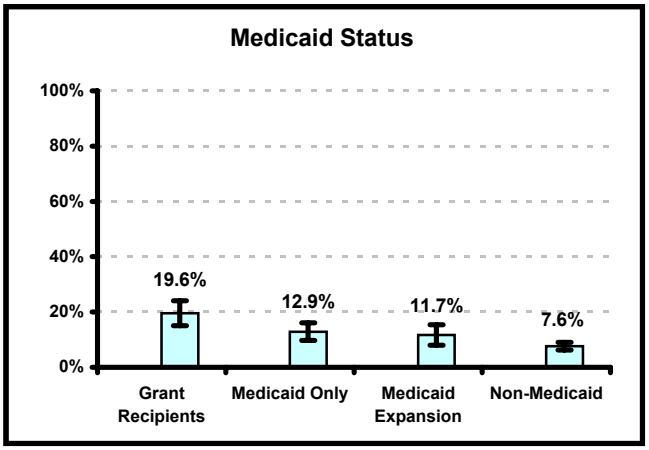
Figure 3.3: Regarding the father's pregnancy intention during the 12 months before delivery, women who reported their husband or partner did not want pregnancy
Washington State PRAMS 1996-1998

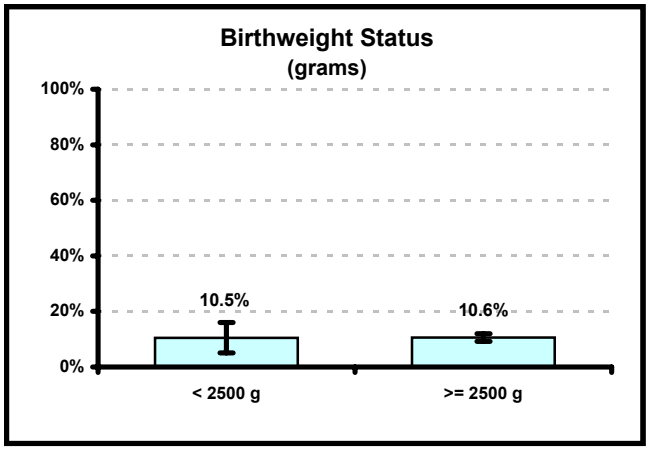












Survey Question #8:

When you got pregnant with your new baby, were you or your husband or partner using any kind of birth control? **Birth control means the pill, condoms, diaphragm, foam, rhythm, Norplant, shots (Depo-Provera), or ANY other way to keep from getting pregnant.**

No (78.5%)

Yes (21.5%)

Summary of Results:

Use of Birth Control at Conception (Table 3.4 & Figure 3.4a)

- Approximately 21.5 percent of women reported using birth control at the time of conception. These women were more likely to be:
  - Teenagers
  - African American
  - Women with less than 12 years of education
  - Unmarried
  - Medicaid recipients (specifically Grant recipients)

- There was no significant difference in the proportion of women who used birth control at the time of conception between those who delivered a low birth weight infant (<2500 grams) and those who delivered an infant of normal weight (≥2500 grams).

Table 3.4: Women who reported using birth control at conception
Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n=5,991)	Yes (n=1,457)	% Yes[b] (%=21.5)	95% CI (19.9-23.1)
Maternal Age				
<20 years	1,014	314	32.6	(27.5-37.7)
20-24 years	1,547	400	23.2	(19.9-26.5)
25-34 years	2,860	637	19.2	(17.0-21.4)
35+ years	569	105	14.4	(10.3-18.5)
Race/Ethnicity				
White	1,403	273	20.0	(17.8-22.2)
African American	961	289	30.1	(27.4-32.8)
Native American	1,243	309	25.2	(23.0-27.4)
Asian/Pacific Islander	1,202	266	22.2	(19.8-24.6)
Hispanic	1,182	320	27.1	(24.6-29.6)
Maternal Education[c]				
<12 years	1,309	351	32.0	(27.5-36.5)
12 years	1,708	437	21.2	(18.3-24.1)
>12 years	2,317	512	18.1	(15.7-20.5)
Marital Status				
Married	3,816	811	18.2	(16.4-20.0)
Unmarried	2,165	641	30.4	(26.9-33.9)
Medicaid Status				
Medicaid[d]	3,174	913	29.8	(27.1-32.5)
Grant Recipients[e]	1,124	336	31.6	(26.3-36.9)
Medicaid Only[f]	1,259	350	29.8	(25.5-34.1)
Medicaid Expansion[g]	791	227	27.6	(22.5-32.7)
Non-Medicaid[h]	2,803	538	15.7	(13.7-17.7)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	352	78	21.2	(13.8-28.6)
Normal Birthweight (≥2500 g)	5,624	1,375	21.6	(19.8-23.4)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database.

Missing responses = 43. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

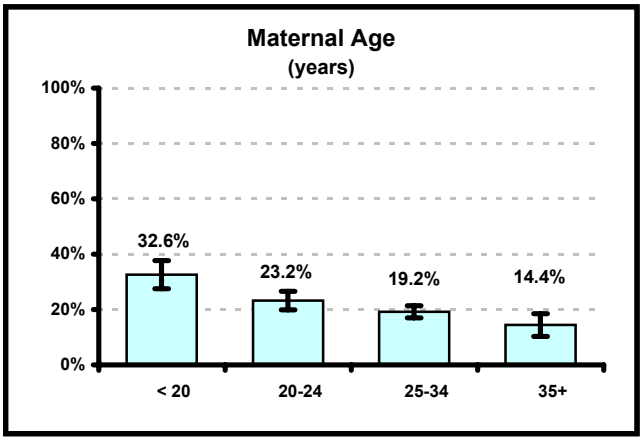
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

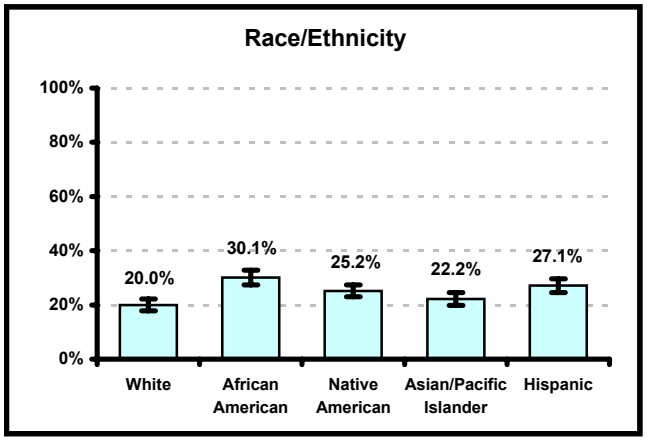
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

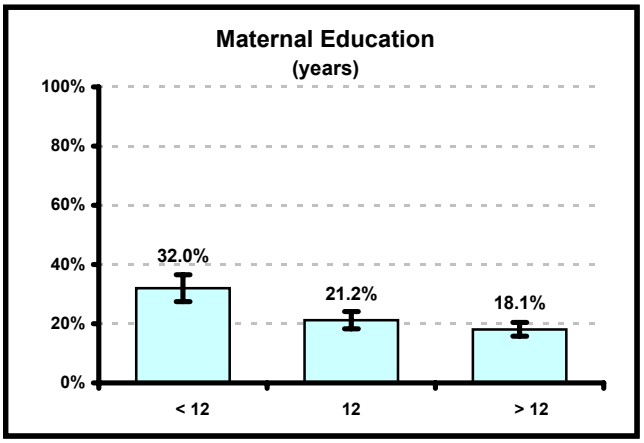
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

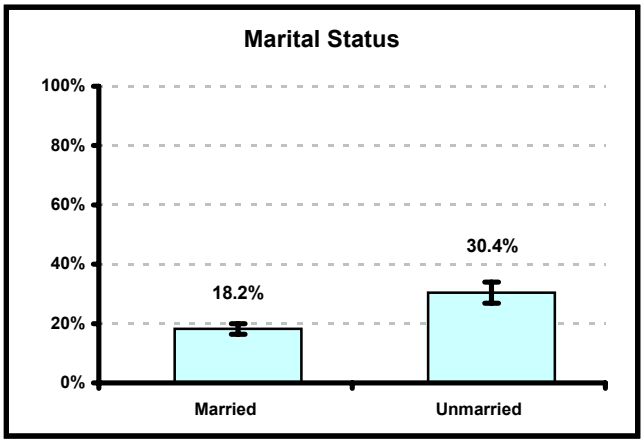
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

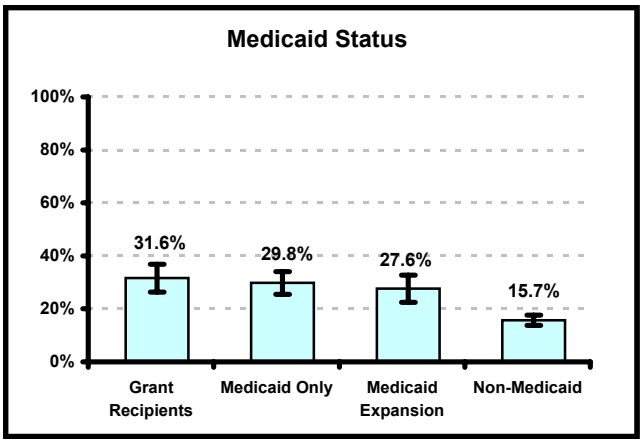
Figure 3.4a: Women who reported using birth control at conception
Washington State PRAMS 1996-1998

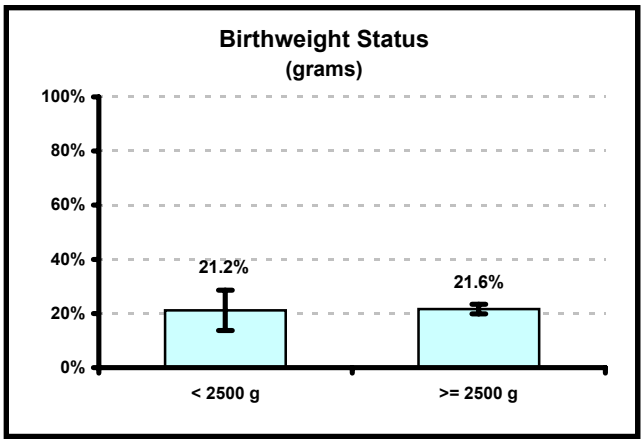












Survey Question #9:

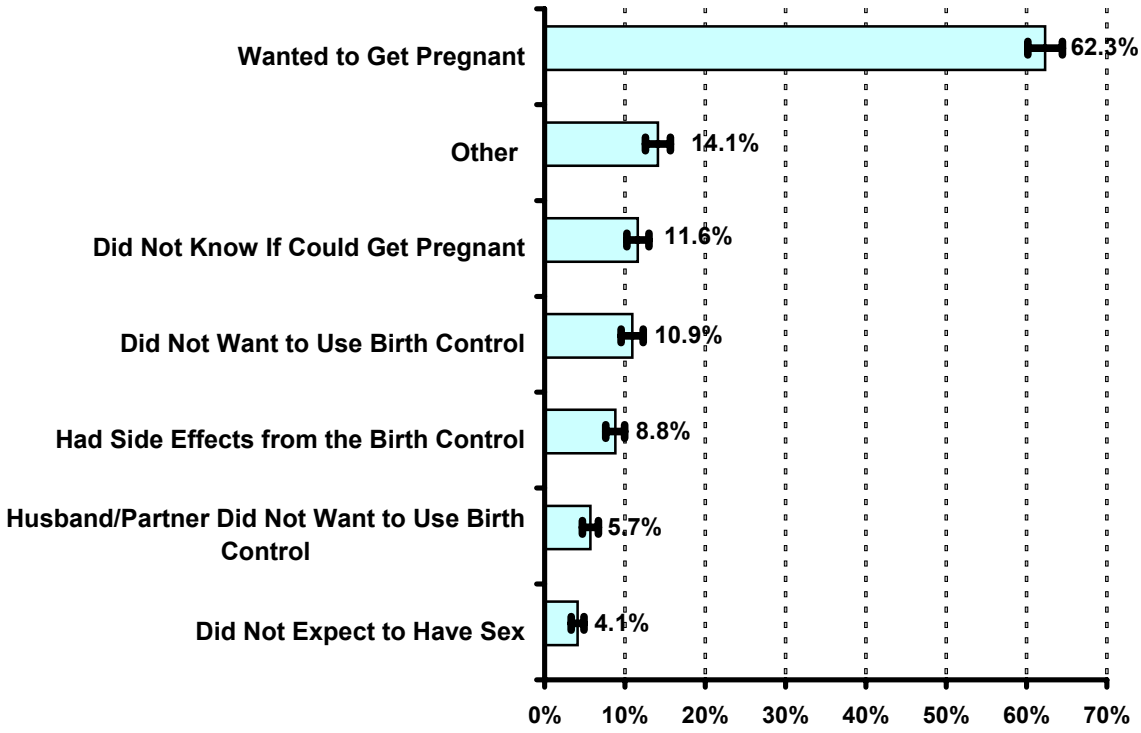
Why were you or your husband or partner not using any birth control? **Check all that apply.**

Summary of Results:

Reasons for Not Using Any Birth Control at Conception (Figure 3.4b)

- The most common reason why women reported they did not use birth control at the time of conception was because they wanted to get pregnant (62.3%).

Figure 3.4b: Reasons for Not Using Any Birth Control at Conception



Summary of Question #62 [Washington State-Added PRAMS Question]:

Are you or your husband or partner using any kind of birth control now? **Birth control means the pill, condoms, diaphragm, foam, rhythm, Norplant, shots (Depo-Provera), or ANY other way to keep from getting pregnant.**

No (20.4%)

Yes (79.6%)

Summary of Results:

Use of Birth Control at Postpartum (Table 3.5 & Figure 3.5a)

- Almost eighty percent (79.6%) of women reported using birth control at postpartum (at the time of survey). These women were more likely to be:
  - White

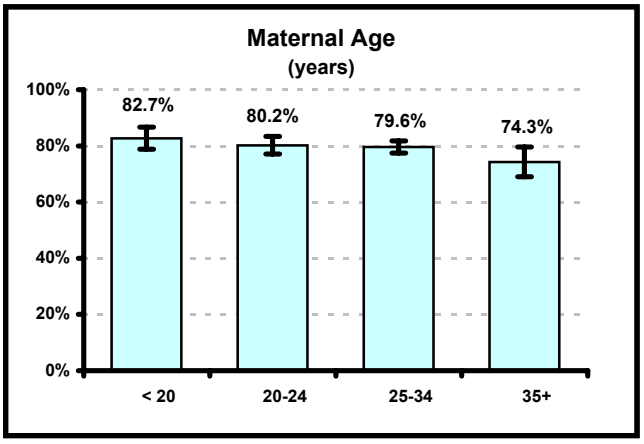
- Women who reported using birth control at postpartum did not significantly differ by maternal age, maternal education, marital status, Medicaid status or infant's birth weight status.

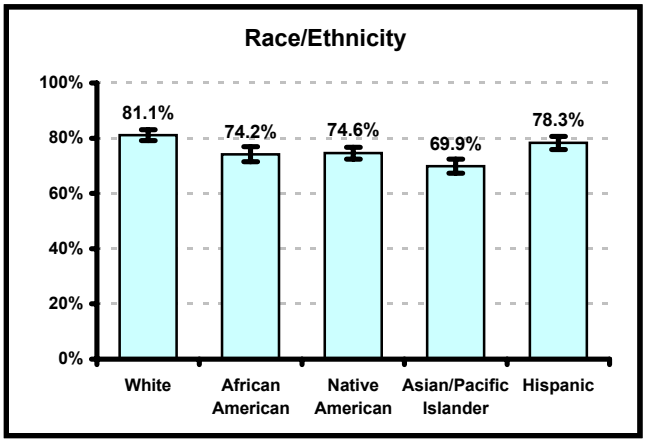
Table 3.5: Women who reported using birth control at postpartum
Washington State PRAMS 1996-1998

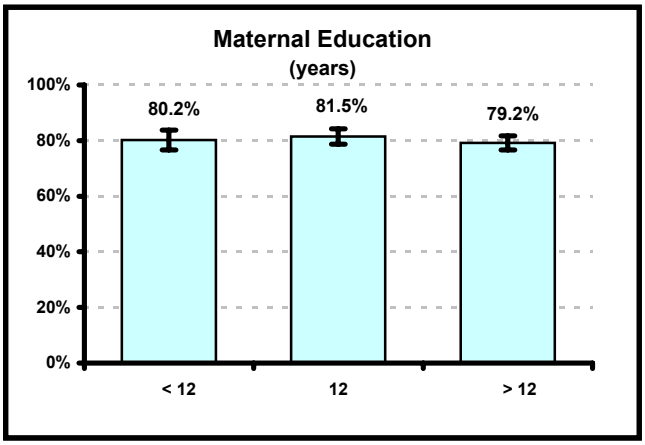
Maternal Characteristics[a]	Respondents (n=5,976)	Yes (n=4,547)	% Yes[b] (%=79.6)	95% CI (78.0-81.2)
Maternal Age				
<20 years	1,013	792	82.7	(78.8-86.6)
20-24 years	1,545	1,192	80.2	(77.1-83.3)
25-34 years	2,848	2,172	79.6	(77.4-81.8)
35+ years	569	390	74.3	(69.0-79.6)
Race/Ethnicity				
White	1,404	1,141	81.1	(79.1-83.1)
African American	959	717	74.2	(71.5-76.9)
Native American	1,243	933	74.6	(72.4-76.8)
Asian/Pacific Islander	1,191	835	69.9	(67.4-72.4)
Hispanic	1,179	921	78.3	(75.9-80.7)
Maternal Education[c]				
<12 years	1,306	1,005	80.2	(76.7-83.7)
12 years	1,700	1,303	81.5	(78.8-84.2)
>12 years	2,317	1,769	79.2	(76.7-81.7)
Marital Status				
Married	3,809	2,960	80.9	(79.1-82.7)
Unmarried	2,156	1,578	76.0	(72.9-79.1)
Medicaid Status				
Medicaid[d]	3,161	2,386	78.0	(75.6-80.4)
Grant Recipients[e]	1,118	786	73.5	(68.6-78.4)
Medicaid Only[f]	1,249	990	81.5	(78.0-85.0)
Medicaid Expansion[g]	794	610	78.3	(73.8-82.8)
Non-Medicaid[n]	2,799	2,151	80.7	(78.5-82.9)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	347	259	76.9	(69.5-84.3)
Normal Birthweight (≥2500 g)	5,614	4,276	79.8	(78.2-81.4)

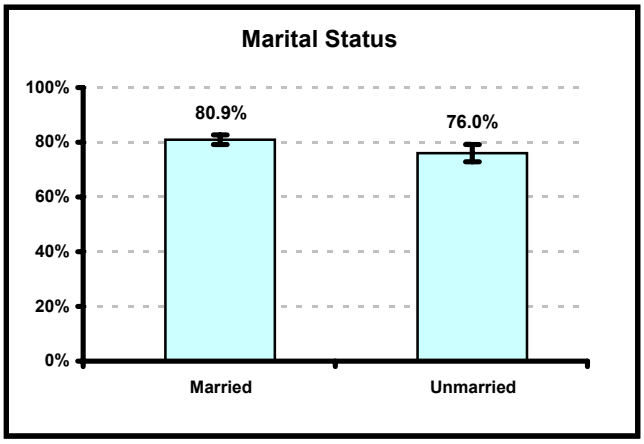
[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database.
Missing responses = 58. CI = Confidence Interval. White includes other/unknown (3.5%).
bPercentage weighted to Washington State Birth Population (Total N = 207,831).
[c]10% or more of the maternal education data is missing from birth certificate data.
[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.
[n]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

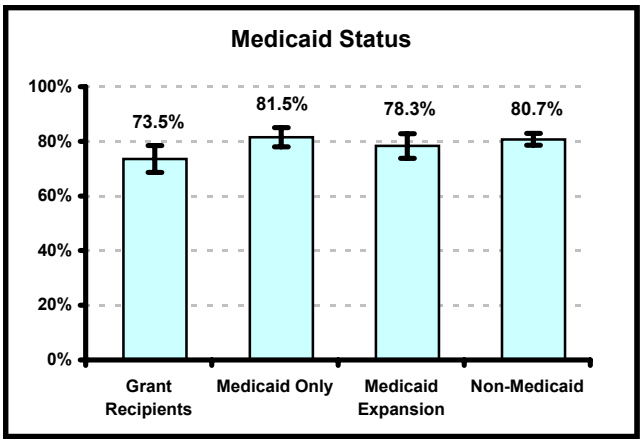
Figure 3.5a: Women who reported using birth control at postpartum
Washington State PRAMS 1996-1998

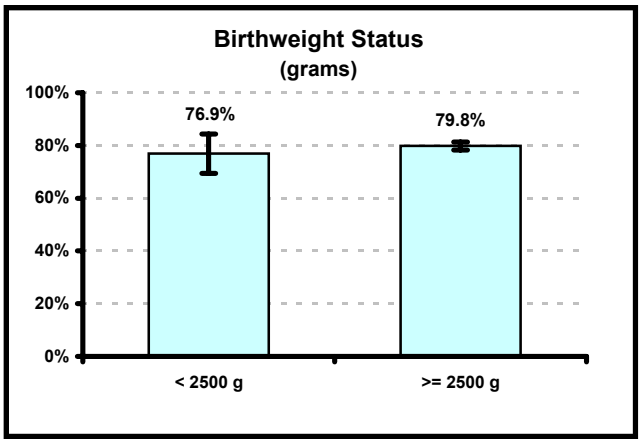












Survey Question #63:

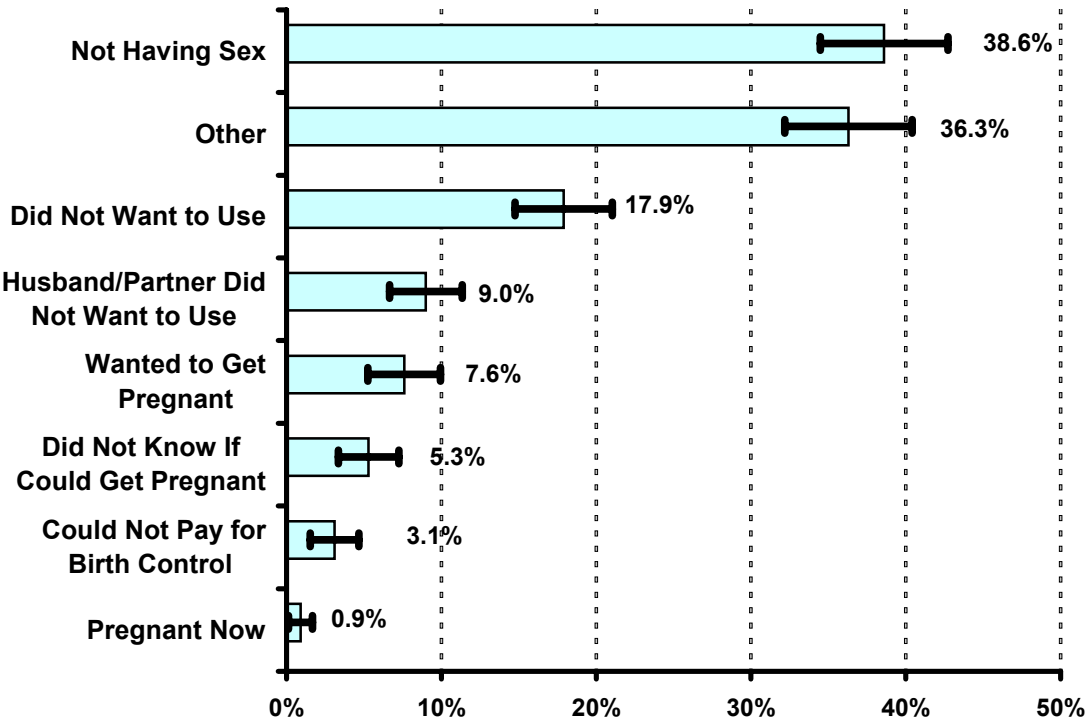
What are your reasons for not using any birth control now?

Summary of Results:

Reasons for Not Using Birth Control at Postpartum (Figure 3.5b)

- The most frequently stated reason why women reported they did not use birth control at postpartum (at the time of survey) was because they were not having sex (38.6%).

Figure 3.5b: Reasons for Not Using Birth Control at Postpartum



Survey Question #16f:

During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about birth control methods to use after your pregnancy?

No (15.0%)

Yes (85.0%)

Summary of Results:

Prenatal Care Provider Discussion of Birth Control Methods to Use After Pregnancy (Table 3.6 & Figure 3.6)

- Eighty-five percent of women said a prenatal care provider discussed birth control methods to use after pregnancy. These women were more likely to be:
  - Hispanic
  - Women with less than 12 years of education
  - Unmarried
  - Medicaid Only recipients

- Teenagers (90.3%) were significantly more likely to report prenatal care provider discussion of birth control methods to use after pregnancy than women aged 25-34 years of age (82.9%).
- Women were significantly more likely to report a prenatal care provider discussed postpartum birth control methods with them at a community health clinic (93.7%) rather than at a private doctor's office (82.7%).
- Women's report of prenatal care provider discussion regarding postpartum birth control did not significantly differ by the infant's birth weight status.

Table 3.6: Women who reported a prenatal care provider discussed birth control methods to use after pregnancy

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n=5,872)	Yes (n=5,073)	% Yes[b] (%=85.0)	95% CI (83.6-86.4)
Maternal Age				
<20 years	988	912	90.3	(87.0-93.6)
20-24 years	1,517	1,344	87.5	(84.8-90.2)
25-34 years	2,804	2,352	82.9	(80.7-85.1)
35+ years	562	464	83.1	(78.4-87.8)
Race/Ethnicity				
White	1,396	1,173	84.1	(82.1-86.1)
African American	946	831	88.2	(86.2-90.2)
Native American	1,217	1,076	88.8	(87.2-90.4)
Asian/Pacific Islander	1,153	943	82.1	(79.9-84.3)
Hispanic	1,160	1,050	90.7	(89.1-92.3)
Maternal Education[c]				
<12 years	1,271	1,176	91.8	(89.1-94.5)
12 years	1,673	1,451	84.9	(82.2-87.6)
>12 years	2,301	1,912	82.8	(80.4-85.2)
Marital Status				
Married	3,764	3,187	83.7	(81.9-85.5)
Unmarried	2,099	1,880	88.7	(86.3-91.1)
Medicaid Status				
Medicaid[d]	3,088	2,786	89.7	(87.7-91.7)
Grant Recipients[e]	1,096	975	90.3	(87.2-93.4)
Medicaid Only[f]	1,220	1,113	91.9	(89.5-94.3)
Medicaid Expansion[g]	772	698	85.5	(81.0-90.0)
Non-Medicaid[n]	2,768	2,274	82.0	(79.8-84.2)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	333	272	81.9	(74.8-89.0)
Normal Birthweight (>2500 g)	5,525	4,787	85.2	(83.6-86.8)
Site of Prenatal Care Visit				
Hospital Clinic	1,581	1,394	86.8	(83.9-89.7)
Health Department Clinic	512	460	90.3	(86.2-94.4)
Private Doctor's Office	2,712	2,260	82.7	(80.5-84.9)
Military Facility	239	209	88.7	(82.0-95.4)
Community or Migrant's Health Center	251	232	93.7	(88.4-99.0)
Other Clinic	519	469	89.5	(85.0-94.0)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; Prenatal care sites from PRAMS. Missing responses = 162. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

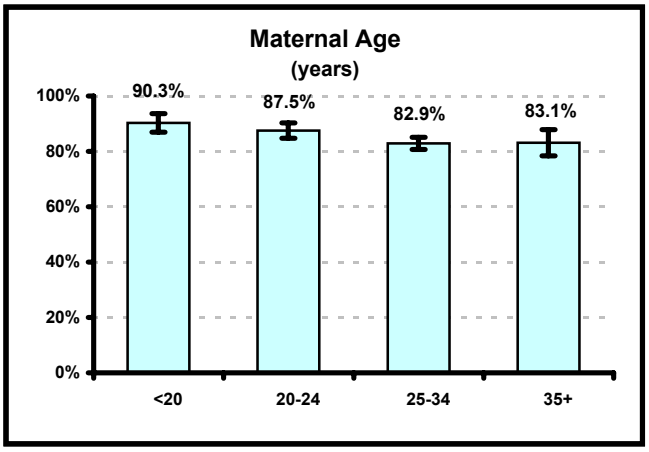
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

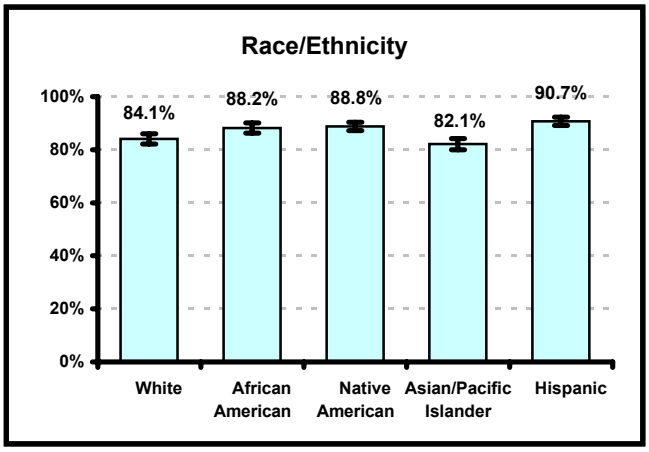
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

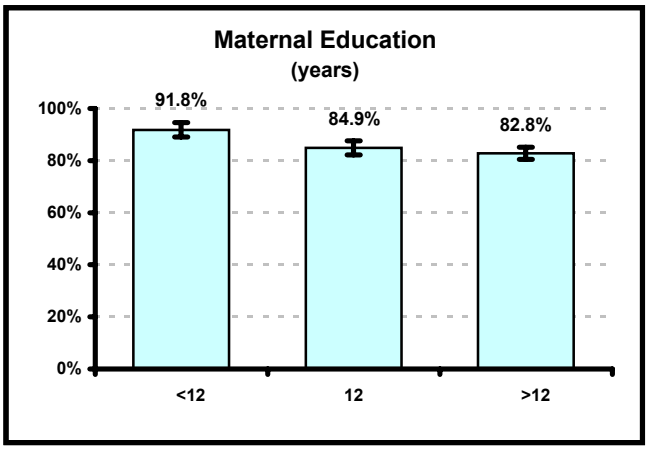
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

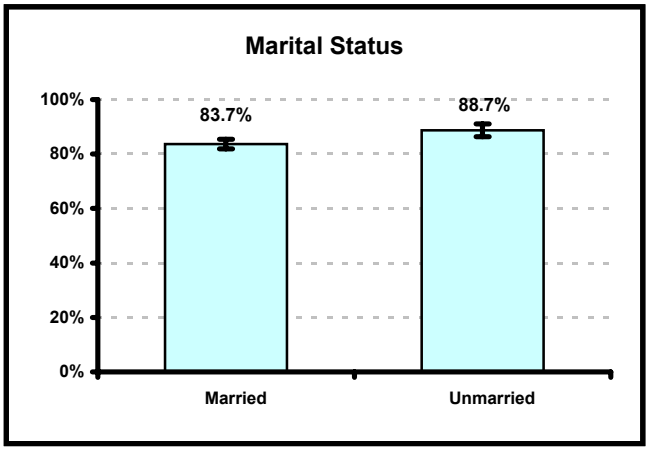
[n]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

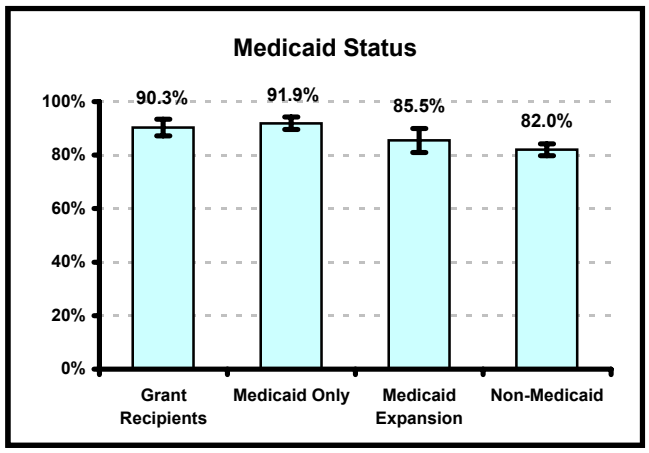
Figure 3.6: Women who reported a prenatal care provider discussed birth control methods to use after pregnancy
Washington State PRAMS 1996-1998

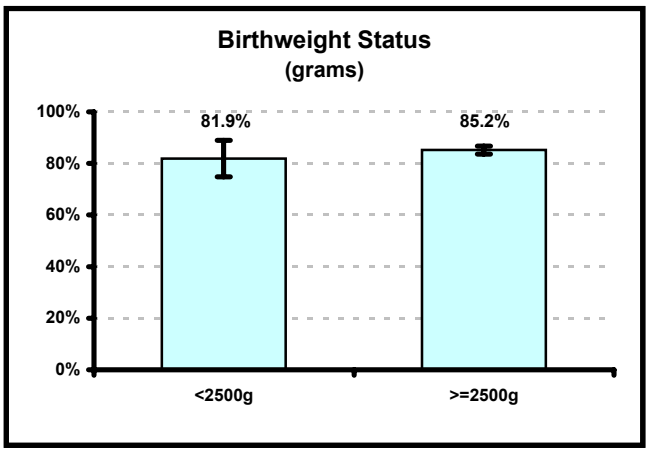












Survey Question #61 [Washington State-Added PRAMS Question]:

After your new baby was born, did a doctor, nurse, or other health care worker talk with you about using birth control?

No (12.7%)

Yes (87.3%)

Summary of Results:

Health Care Provider Discussion of Birth Control Methods to Use After Birth of Baby (Table 3.7 & Figure 3.7)

- The proportion of women who said a health care provider discussed using birth control after their baby was born was 87.3 percent. These women were more likely to be:
  - Hispanic

- Women who reported a health care provider discussed the use of birth control at postpartum did not differ significantly by maternal age, maternal education, martial status, Medicaid status, or infant's birth weight status.

Table 3.7: Women who reported a health care provider discussed birth control methods to use after their baby was born

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n=5,986)	Yes (n=5,282)	% Yes[b] (%=87.3)	95% CI (85.9-88.7)
Maternal Age				
<20 years	1,013	916	89.1	(85.6-92.6)
20-24 years	1,545	1,377	88.7	(86.0-91.4)
25-34 years	2,853	2,506	87.0	(85.0-89.0)
35+ years	574	482	83.1	(78.4-87.8)
Race/Ethnicity				
White	1,401	1,209	86.3	(84.5-88.1)
African American	959	840	87.7	(85.7-89.7)
Native American	1,245	1,076	86.6	(85.0-88.2)
Asian/Pacific Islander	1,199	1,064	88.8	(87.0-90.6)
Hispanic	1,182	1,093	92.7	(91.3-94.1)
Maternal Education[c]				
<12 years	1,309	1,192	90.1	(87.0-93.2)
12 years	1,700	1,493	85.0	(82.3-87.7)
>12 years	2,321	2,026	87.5	(85.5-89.5)
Marital Status				
Married	3,811	3,354	87.5	(85.9-89.1)
Unmarried	2,164	1,920	87.0	(84.3-89.7)
Medicaid Status				
Medicaid[q]	3,169	2,832	88.2	(86.2-90.2)
Grant Recipients[e]	1,123	979	89.0	(85.5-92.5)
Medicaid Only[f]	1,252	1,130	88.1	(84.8-91.4)
Medicaid Expansion[g]	794	723	87.3	(83.2-91.4)
Non-Medicaid[n]	2,801	2,439	86.8	(85.0-88.6)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	350	307	84.7	(77.8-91.6)
Normal Birthweight (≥2500 g)	5,621	4,961	87.4	(86.0-88.8)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database.
Missing responses = 48. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

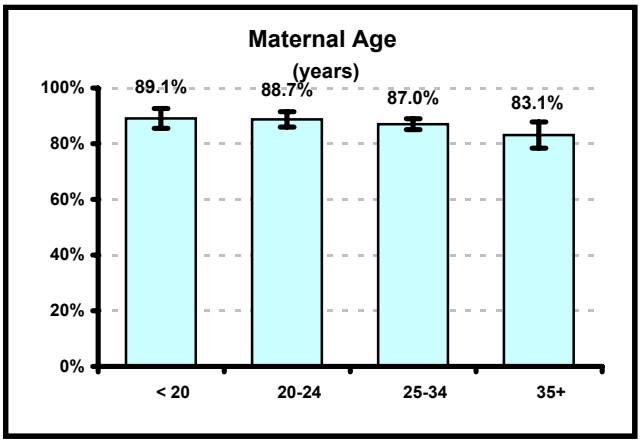
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

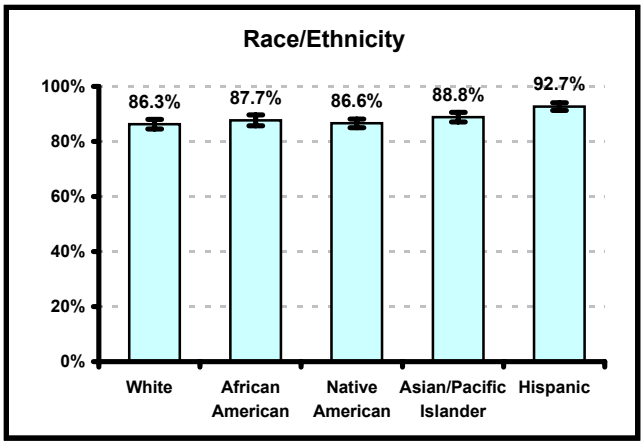
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

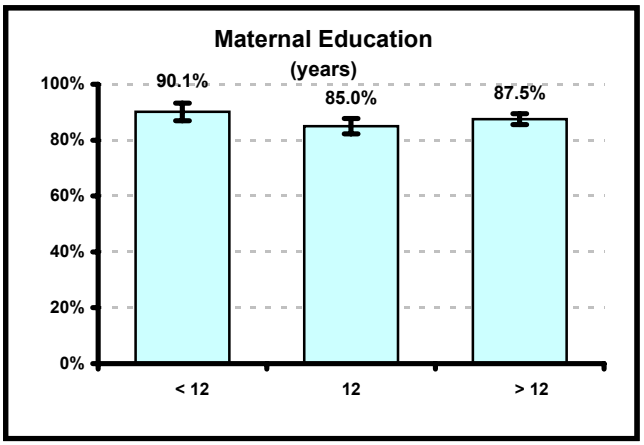
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

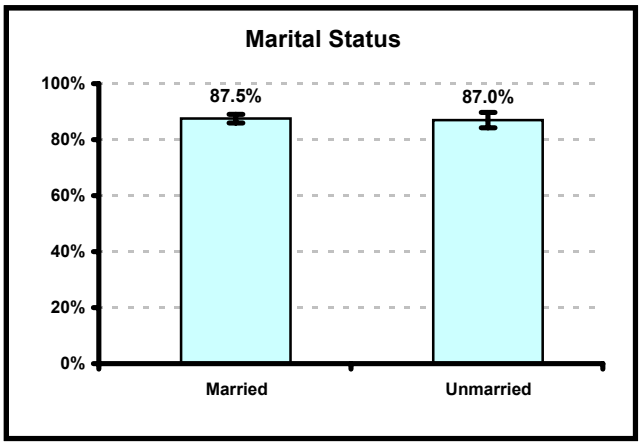
[n]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

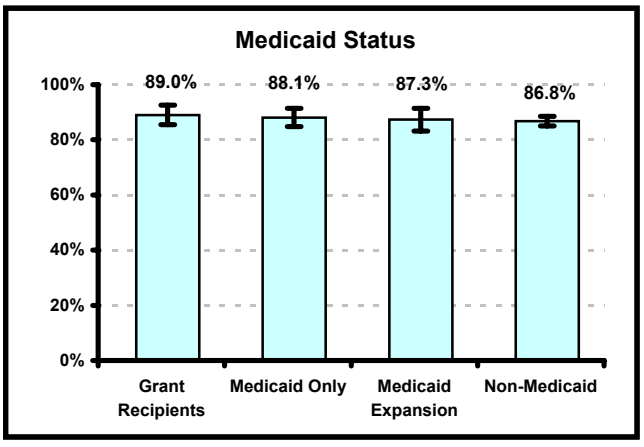
Figure 3.7: Women who reported a health care provider discussed birth control methods to use after their baby was born
Washington State PRAMS 1996-1998

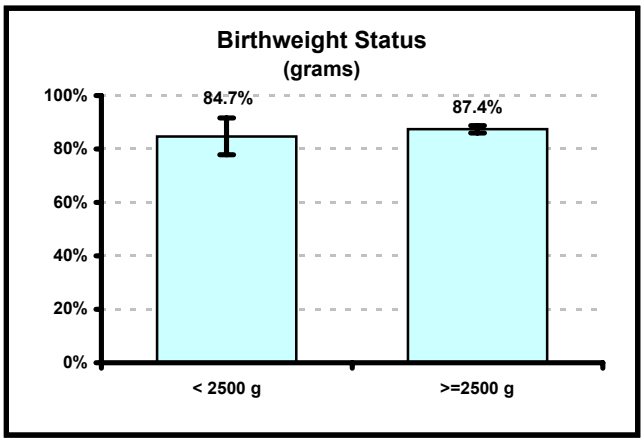












PRENATAL CARE

WASHINGTON STATE PRAMS 1996-1998

Prenatal Care

Prenatal care is recommended for all pregnant women because of its potential to improve the long-term health of the mother and infant, as well as prevent adverse birth outcomes. The American College of Obstetricians and Gynecologists and the American Academy of Pediatrics recommends that women make 13 to 15 prenatal visits during their gestational period, beginning with the first trimester of pregnancy.[1]

There are many benefits to receiving early and consistent prenatal care. Medical conditions (e.g. pregnancy-induced hypertension and diabetes) that may impact the health of the mother and infant have a better opportunity to be diagnosed and managed early in pregnancy. Women who are at risk for having an infant with a genetic disorder may be offered screening. Pregnant women may be educated and counseled by their prenatal care providers about risk behaviors (e.g. alcohol, tobacco and illicit drug use) that can affect birth outcomes.[1,2]

In spite of the benefits of early and consistent prenatal care, some women are more likely to initiate prenatal care late in their pregnancy. Several studies have shown that late entry into prenatal care is more common among black and Hispanic women, teenagers and women aged 40 years or older, women with low level education and income, and women whose pregnancy is unintended.[2,3,4] Factors affecting the timing of entry into prenatal care are also associated with risk behaviors during pregnancy, adverse medical conditions and birth outcomes.[5]

Washington State PRAMS data on prenatal care can be used to monitor efforts to increase the percentage of women initiating prenatal care in the first trimester. The Healthy People 2010 goal is to increase prenatal care starting in the first trimester to 90 percent.[6] These data can also be used to meet requirements of providing information about prenatal care utilization in the Title V Block Grant, which is administered by the Maternal and Child Health Bureau, and to enhance prenatal care programs.

References:

[1] American Academy of Pediatrics. Committee on Fetus and Newborn. The American College of Obstetricians and Gynecologists. Committee on Obstetric Practice. Guidelines for Prenatal Care, 4th ed.: Washington, DC: American College of Obstetricians and Gynecologists, 1997.

[2] Ventura SJ, Martin JA, Curtin SC, Mathews TJ. Report of Final Natality Statistics, 1995. Mon Vital Stat Rep 1997; 45 (11sw): 12-13.

[3] Institute of Medicine. Prenatal Care: Reaching Mothers, Reaching Infants. Washington, DC: National Academy Press, 1988.

[4] Institute of Medicine. Preventing Low Birth Weight. Washington, DC: National Academy Press, 1988.

[5] Gilbert CB, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1999.

[6] U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington, DC: January 2000.

Survey Question #4:

How many weeks or months pregnant were you when you were ***sure*** you were pregnant? (For example, you had a pregnancy test or doctor or nurse said you were pregnant.)

____ Weeks or ____ Months (1^{st} trimester 95.2%; after 1^{st} trimester 4.8%)

I don't remember

Summary of Results:

Timing of Confirmation of Pregnancy Status (Table 4.1 & Figure 4.1)

- Almost all (95.2%) women confirmed their pregnancy status by a test or doctor or nurse in the first trimester. These women were more likely to be:
  - 35 years of age or older
  - White
  - Women with more than a high school education
  - Married
  - Non-Medicaid recipients

- Women who had their pregnancy status confirmed by a test or doctor or nurse in the first trimester did not differ significantly by the infant's birth weight status or their site of prenatal care visit.

- The proportion of women who reported that their pregnancy status was confirmed by a test or doctor or nurse in the first trimester remained stable from January 1994 through December 1998 (Refer to Appendix C for details.)

Table 4.1: Women who reported their pregnancy status was confirmed by a test or doctor or nurse in the first trimester.[a]

Washington State PRAMS 1996-1998

Maternal Characteristics[b]	Respondents (n= 5,722)	Yes (n= 5,362)	% Yes[c] (%= 95.2)	95% CI (94.4-96.0)
Maternal Age				
<20 years	944	834	90.5	(87.4-93.6)
20-24 years	1,477	1,377	94.0	(92.0-96.0)
25-34 years	2,754	2,631	96.6	(95.6-97.6)
35+ years	546	520	97.5	(95.9-99.1)
Race/Ethnicity				
White	1,371	1,319	96.0	(95.0-97.0)
African American	928	854	91.5	(89.7-93.3)
Native American	1,176	1,090	92.0	(90.6-93.4)
Asian/Pacific Islander	1,119	1,051	93.6	(92.2-95.0)
Hispanic	1,128	1,048	92.8	(91.2-94.4)
Maternal Education[d]				
<12 years	1,222	1,093	90.7	(88.0-93.4)
12 years	1,627	1,516	94.4	(92.6-96.2)
>12 years	2,256	2,177	97.2	(96.2-98.2)
Marital Status				
Married	3,679	3,532	97.1	(96.3-97.9)
Unmarried	2,035	1,823	90.0	(87.6-92.4)
Medicaid Status				
Medicaid[e]	2,989	2,727	92.3	(90.7-93.9)
Grant Recipients[f]	1,052	931	88.7	(85.2-92.2)
Medicaid Only[g]	1,181	1,092	94.0	(92.0-96.0)
Medicaid Expansion[h]	756	704	94.2	(91.8-96.6)
Non-Medicaid[i]	2,717	2,624	97.2	(96.2-98.2)
Birthweight Status (grams)				
Low Birth Weight (<2500 g)	333	306	95.1	(91.6-98.6)
Normal Birth Weight (≥2500 g)	5,375	5,045	95.2	(94.4-96.0)
Site of Prenatal Care Visit				
Hospital Clinic	1,511	1,410	95.5	(93.9-97.1)
Health Department Clinic	482	437	92.1	(88.8-95.4)
Private Doctor's Office	2,631	2,514	96.3	(95.3-97.3)
Military Facility	232	223	97.5	(94.6-100.4)
Community or Migrant's Health Center	229	202	89.6	(84.3-94.9)
Other Clinic	500	462	92.6	(88.7-96.5)

[a]"I don't remember" observations were excluded from PRAMS analyses.

[b]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; Prenatal Care Sites from PRAMS. Missing responses =437. CI = Confidence Interval. White includes other/unknown (3.5%).

[c]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[d]10% or more of the maternal education data is missing from birth certificate data.

[e]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

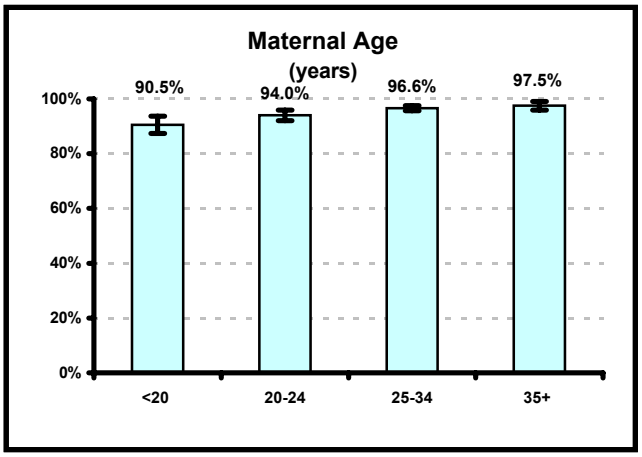
[f]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

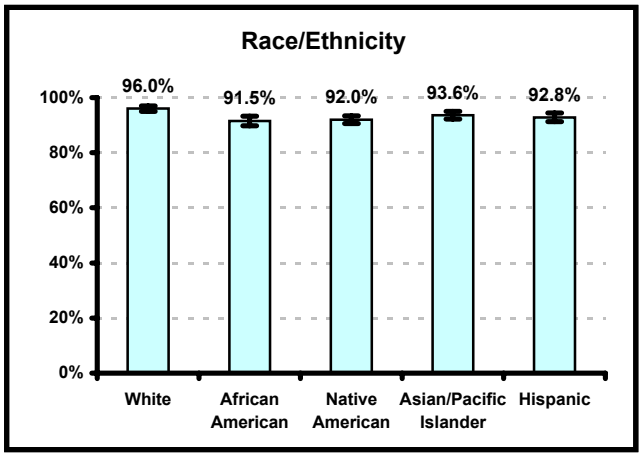
[g]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

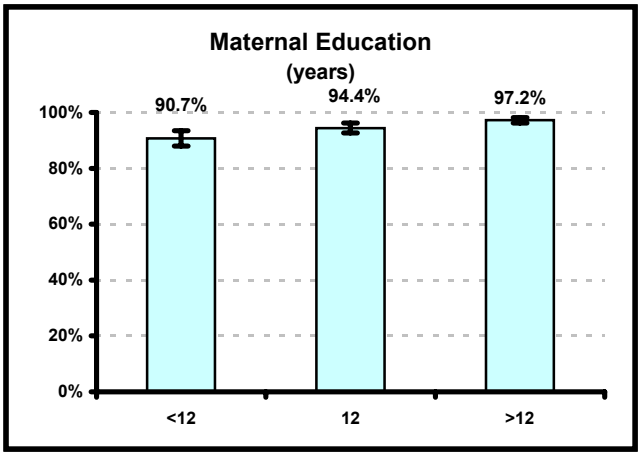
[h]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

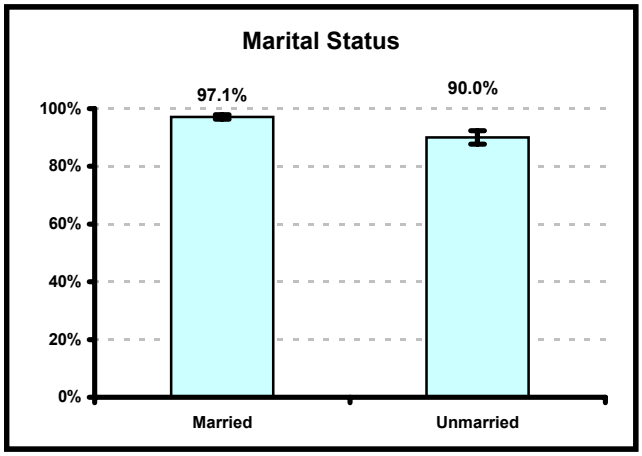
[i]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

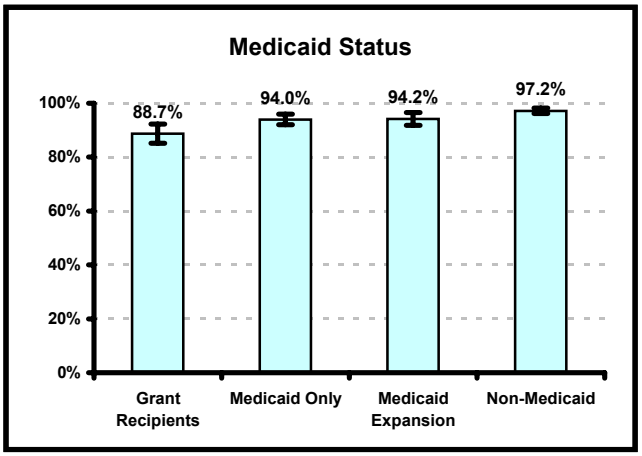
Figure 4.1: Women who reported their pregnancy status was confirmed by a test or doctor or nurse in the first trimester.
Washington State PRAMS 1996-1998











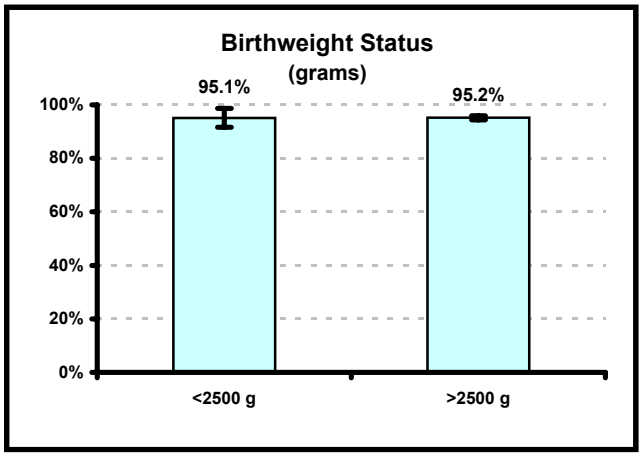
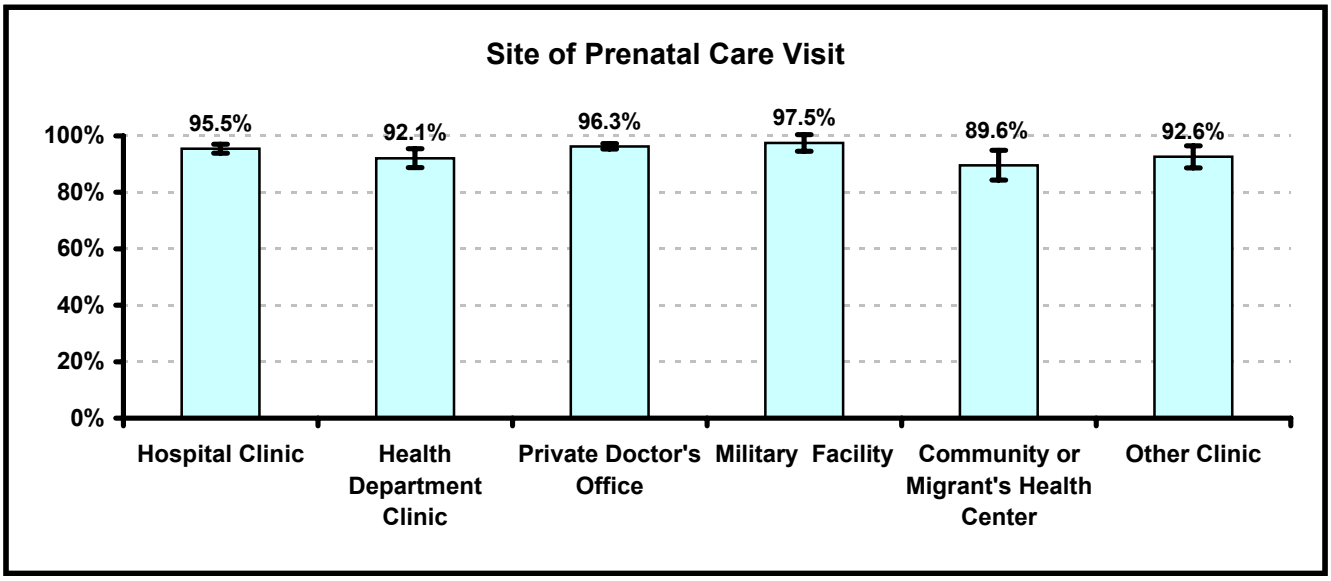


Figure 4.1 (cont'd): Women who reported their pregnancy status was confirmed by a test or doctor or nurse in the first trimester.
Washington State PRAMS 1996-1998



Survey Question #10:

How many weeks or months pregnant were you when you had your first visit for prenatal care? **Don't count a visit that was only for a pregnancy test or only for WIC (Women, Infants and Children's Food Program).**

____ Weeks or ____ Months (1st trimester 78.1%; after 1st trimester 15.9%)

I did not go for prenatal care (0.4%)

Summary of Results:

Timing of First Prenatal Care Visit (Table 4.2 & Figure 4.2)

- Around eighty percent (78.1%) of women reported having their first prenatal care visit in the first trimester. These women were more likely to be:
  - 25 years of age or older
  - White
  - Women with more than a high school education
  - Married
  - Non-Medicaid recipients

- Women who reported having their first prenatal care visit in the first trimester were more likely to have gone to a military facility (84.9%) for prenatal care services than a community or migrant health clinic (58.9%) or a health department clinic (67.1%).

- There was no significant relationship between women who had their first prenatal care visit in the first trimester and the infant's birth weight status.

- No significant change in the proportion of women who reported having their first prenatal care visit in the first trimester was noted for the surveillance period January 1994 through December 1998 (Refer to Table 8.1 in Appendix C for details).

Table 4.2: Women who reported having their first prenatal care visit the first trimester.

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n= 5,922)	Yes (n= 4,322)	% Yes[c] (%= 78.1)	95% CI (76.5-79.7)
Maternal Age				
<20 years	999	581	63.9	(58.8-69.0)
20-24 years	1,531	1,074	73.4	(69.9-76.9)
25-34 years	2,830	2,228	82.7	(80.5-84.9)
35+ years	561	439	83.7	(79.4-88.0)
Race/Ethnicity				
White	1,391	1,141	81.3	(79.1-83.5)
African American	948	709	73.1	(70.4-75.8)
Native American	1,227	846	67.7	(65.3-70.1)
Asian/Pacific Islander	1,184	850	70.4	(67.9-72.9)
Hispanic	1,172	776	65.6	(62.9-68.3)
Maternal Education[c]				
<12 years	1,289	780	64.7	(60.4-69.0)
12 years	1,683	1,186	73.5	(70.2-76.8)
>12 years	2,303	1,908	86.3	(84.1-88.5)
Marital Status				
Married	3,780	2,972	82.8	(81.0-84.6)
Unmarried	2,132	1,343	65.3	(61.8-68.8)
Medicaid Status				
Medicaid[d]	3,125	1,998	66.0	(63.3-68.7)
Grant Recipients[e]	1,108	706	64.9	(59.6-70.2)
Medicaid Only[f]	1,236	788	68.6	(64.5-72.7)
Medicaid Expansion[g]	781	504	63.3	(57.8-68.8)
Non-Medicaid[h]	2,783	2,321	86.3	(84.5-88.1)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	343	244	75.6	(67.8-83.4)
Normal Birthweight (≥2500 g)	5,565	4,071	78.2	(76.6-79.8)
Site of Prenatal Care Visit				
Hospital Clinic	1,570	1,097	73.6	(70.1-77.1)
Health Department Clinic	514	321	67.1	(60.8-73.4)
Private Doctor's Office	2,700	2,173	82.9	(80.7-85.1)
Military Facility	238	191	84.3	(76.9-91.7)
Community or Migrant's Health Center	247	157	58.0	(47.4-68.6)
Other Clinic	517	354	72.3	(65.8-78.8)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; Prenatal care sites from PRAMS. Missing responses =112. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

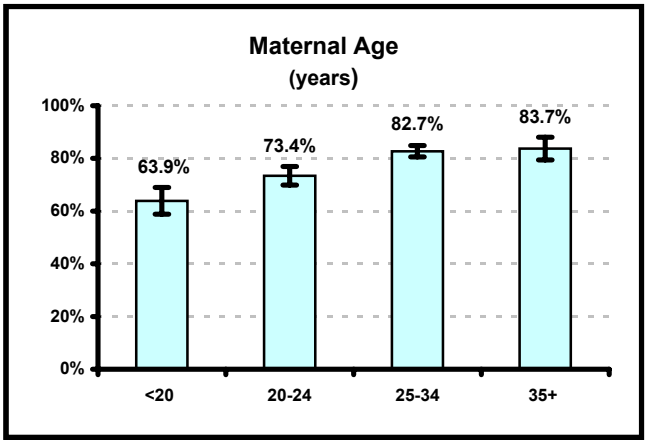
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

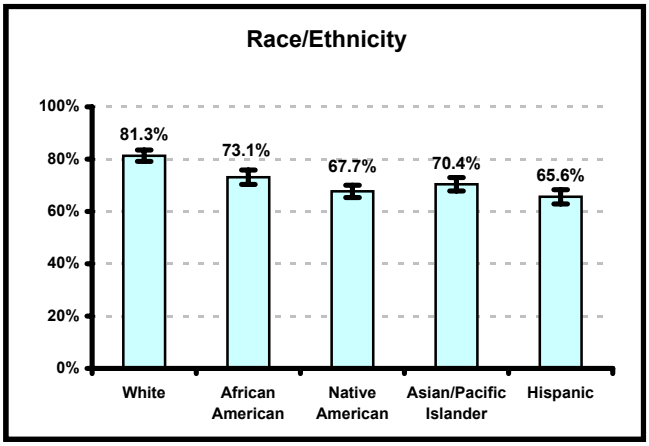
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

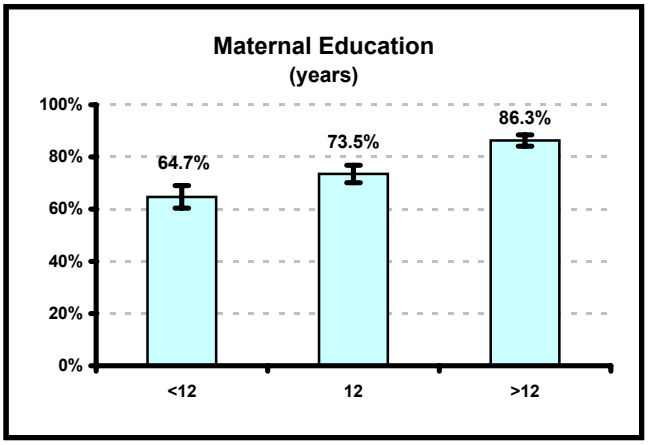
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

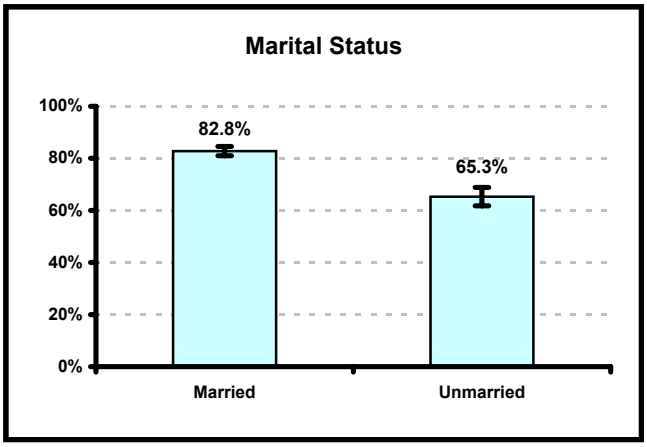
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

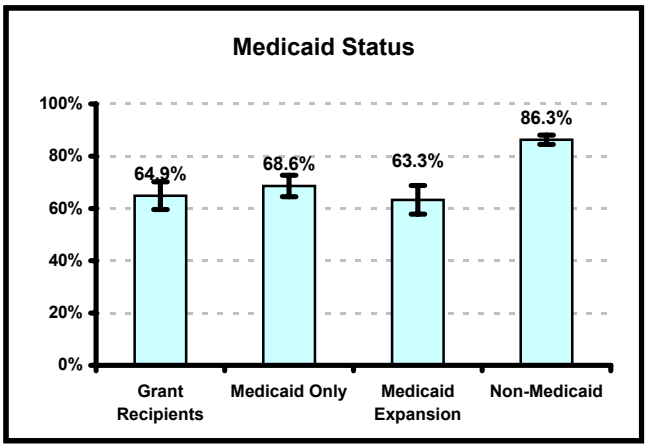
Figure 4.2: Women who reported having their first prenatal care visit the first trimester.
Washington State PRAMS 1996-1998











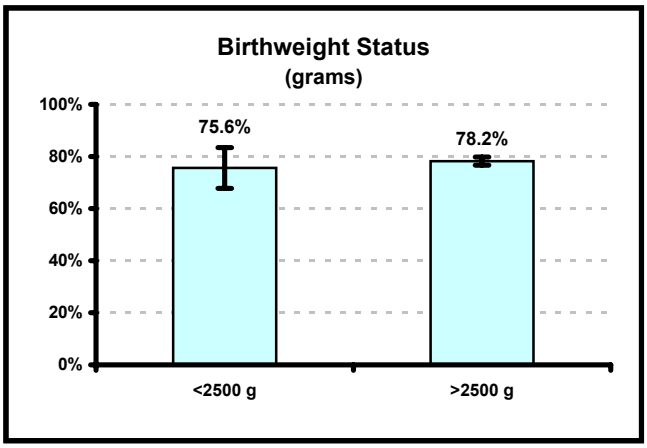
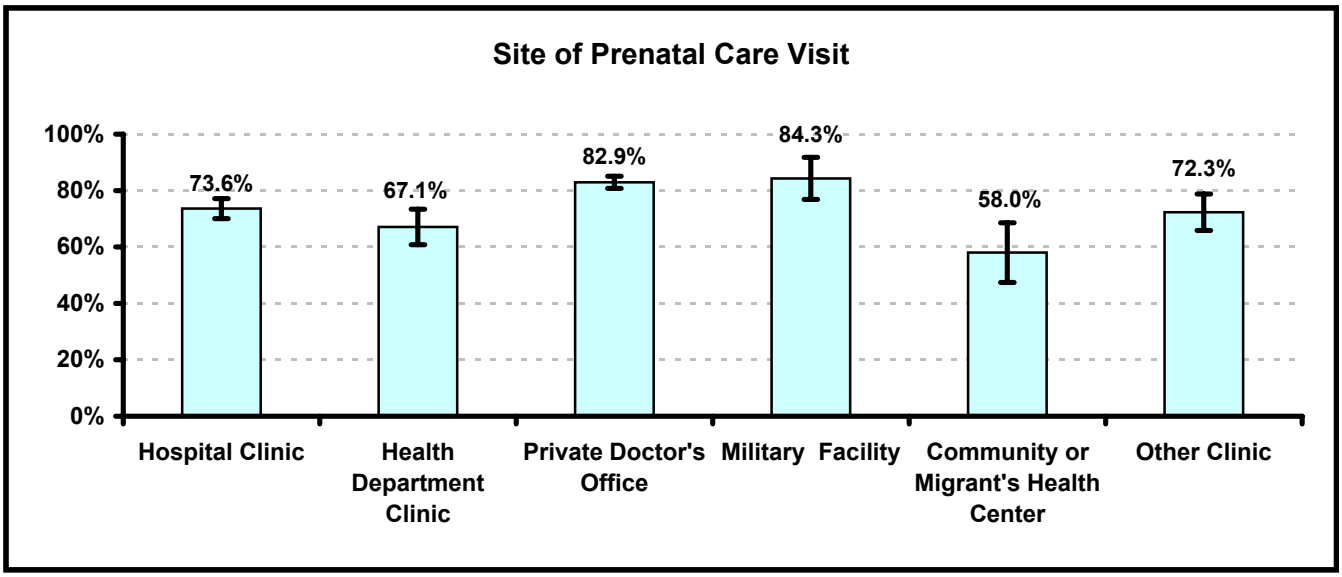


Figure 4.2: Women who reported having their first prenatal care visit the first trimester.
Washington State PRAMS 1996-1998



Survey Question #11:

Did you get prenatal care as early in your pregnancy as you wanted?

No (18.7%)

Yes (81.1%)

I did not want prenatal care (0.3%)

Summary of Results:

Received Prenatal Care As Soon As Desired (Table 4.3 & Figure 4.3)

- Approximately 81.1 percent of women received prenatal care as soon as they desired. These women were more likely to be:
  - 25 years of age or older
  - Women with more than 12 years of education
  - Married
  - Non-Medicaid recipients
- Higher proportion of White women (82.1%) reported receiving prenatal care as soon as they desired than Native American women (71.1%) or Asian/Pacific Islander women (75.7%)
- Women who said they received prenatal care as soon as they desired were more likely to have received their prenatal care services at a private doctor's office (83.8%) than at a health department clinic (69.9%) or at a community or migrant health center (69.9%).
- Women's report of receiving prenatal care as soon as desired did not significantly differ by the infant's birth weight status.
- During January 1994 through December 1998, the proportion of women who reported receiving prenatal care as soon as they desired remained stable (Refer to Table 8.1 in Appendix C for details).

Table 4.3: Women who reported receiving prenatal care as soon as they desired

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n= 5,975)	Yes (n=4,682)	% Yes[b] (%=81.1)	95% CI (79.5-82.7)
Maternal Age				
<20 years	1,011	680	68.7	(63.6-73.8)
20-24 years	1,539	1,160	75.8	(72.3-79.3)
25-34 years	2,851	2,371	86.1	(84.1-88.1)
35+ years	573	471	83.9	(79.4-88.4)
Race/Ethnicity				
White	1,404	1,160	82.1	(80.1-84.1)
African American	957	782	80.6	(78.1-83.1)
Native American	1,242	883	71.1	(68.9-73.3)
Asian/Pacific Islander	1,199	922	75.7	(73.3-78.1)
Hispanic	1,173	935	79.5	(77.1-81.9)
Maternal Education[c]				
<12 years	1,300	943	73.2	(69.1-77.3)
12 years	1,700	1,275	76.4	(73.3-79.5)
>12 years	2,319	1,954	87.0	(85.0-89.0)
Marital Status				
Married	3,807	3,181	85.8	(84.2-87.4)
Unmarried	2,158	1,493	68.3	(64.8-71.8)
Medicaid Status				
Medicaid[d]	3,159	2,291	71.2	(68.5-73.9)
Grant Recipients[e]	1,125	793	70.4	(65.3-75.5)
Medicaid Only[f]	1,248	914	73.9	(69.8-78.0)
Medicaid Expansion[g]	786	584	67.8	(62.3-73.3)
Non-Medicaid[h]	2,802	2,387	87.9	(86.1-89.7)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	354	255	74.8	(66.8-82.8)
Normal Birthweight (≥2500 g)	5,606	4,415	81.4	(79.8-83.0)
Site of Prenatal Care Visit				
Hospital Clinic	1,586	1,263	80.3	(77.0-83.6)
Health Department Clinic	515	374	69.9	(63.0-76.8)
Private Doctor's Office	2,726	2,234	83.8	(81.8-85.8)
Military Facility	240	188	79.5	(71.1-87.9)
Community or Migrant's Health Center	249	189	69.9	(59.5-80.3)
Other Clinic	526	399	83.2	(78.1-88.3)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; Prenatal Care Sites from PRAMS. Missing reponses =59. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

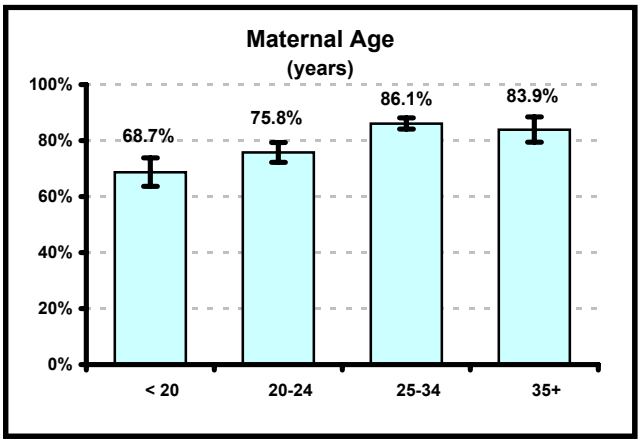
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

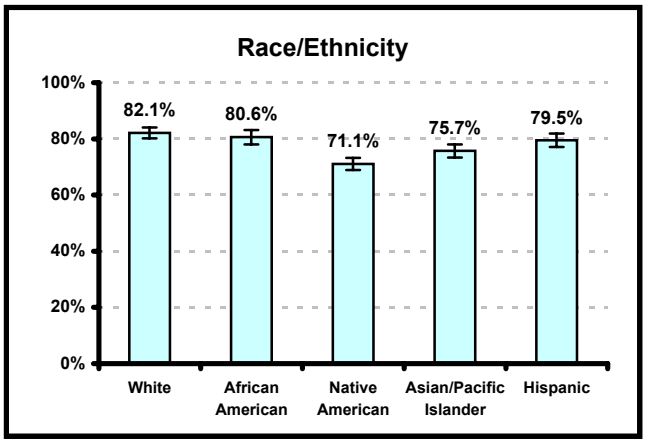
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

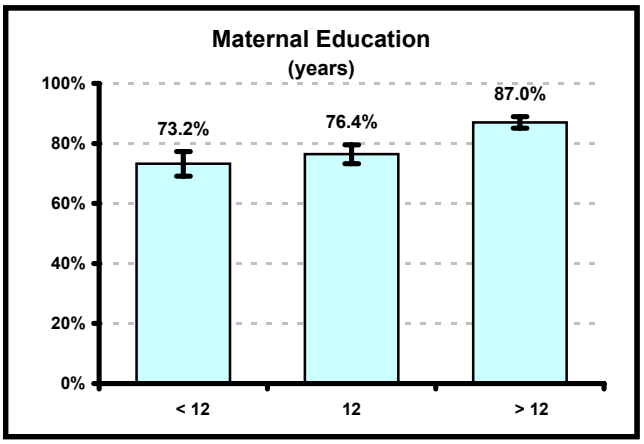
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

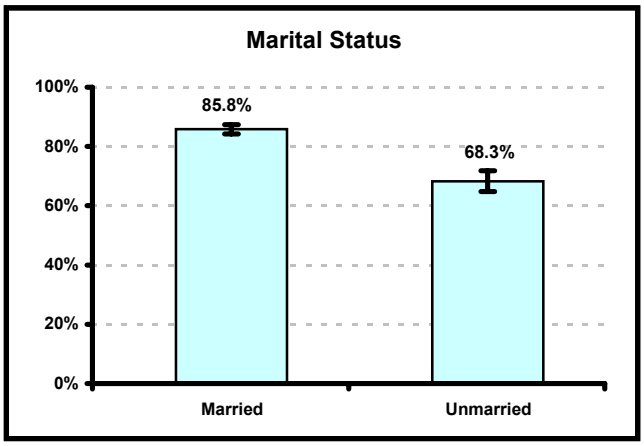
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

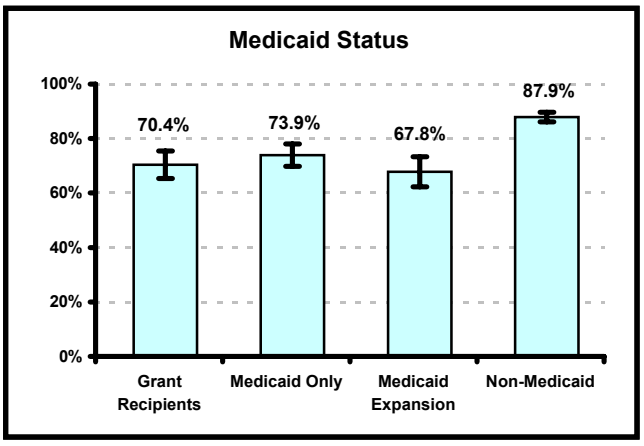
Figure 4.3: Women who reported receiving prenatal care as soon as they desired
Washington State PRAMS 1996-1998











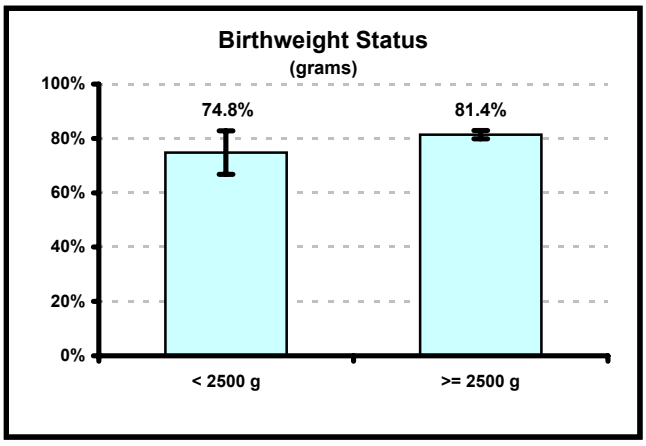
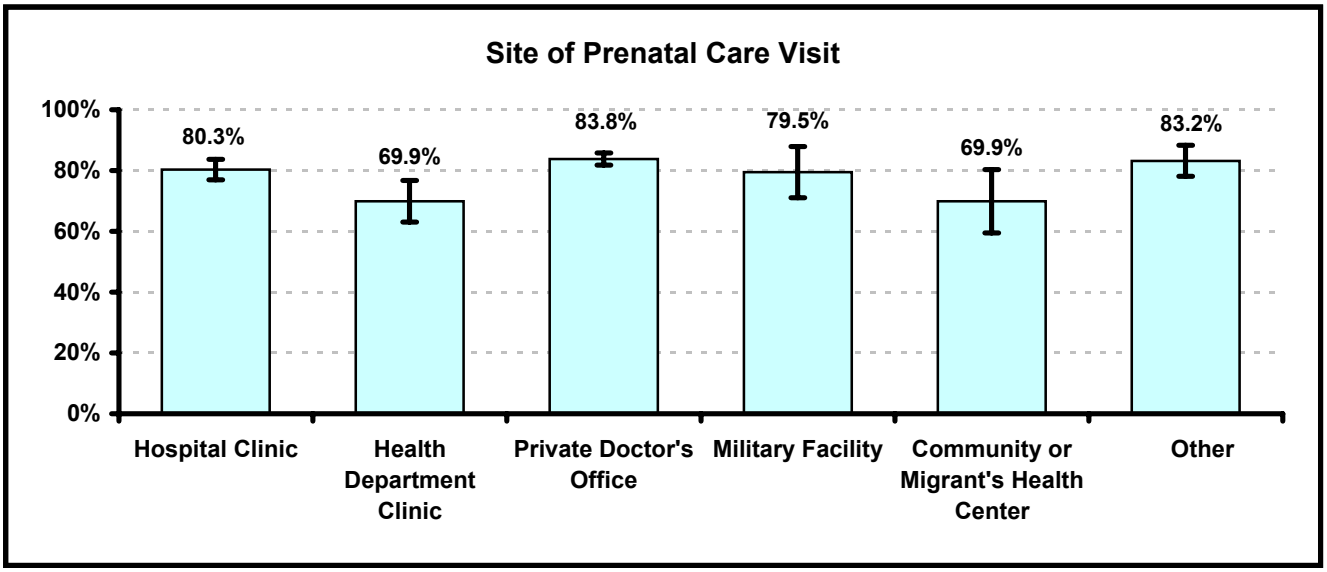


Figure 4.3 (cont'd): Women who reported receiving prenatal care as soon as they desired
Washington State PRAMS 1996-1998



Survey Question #12:

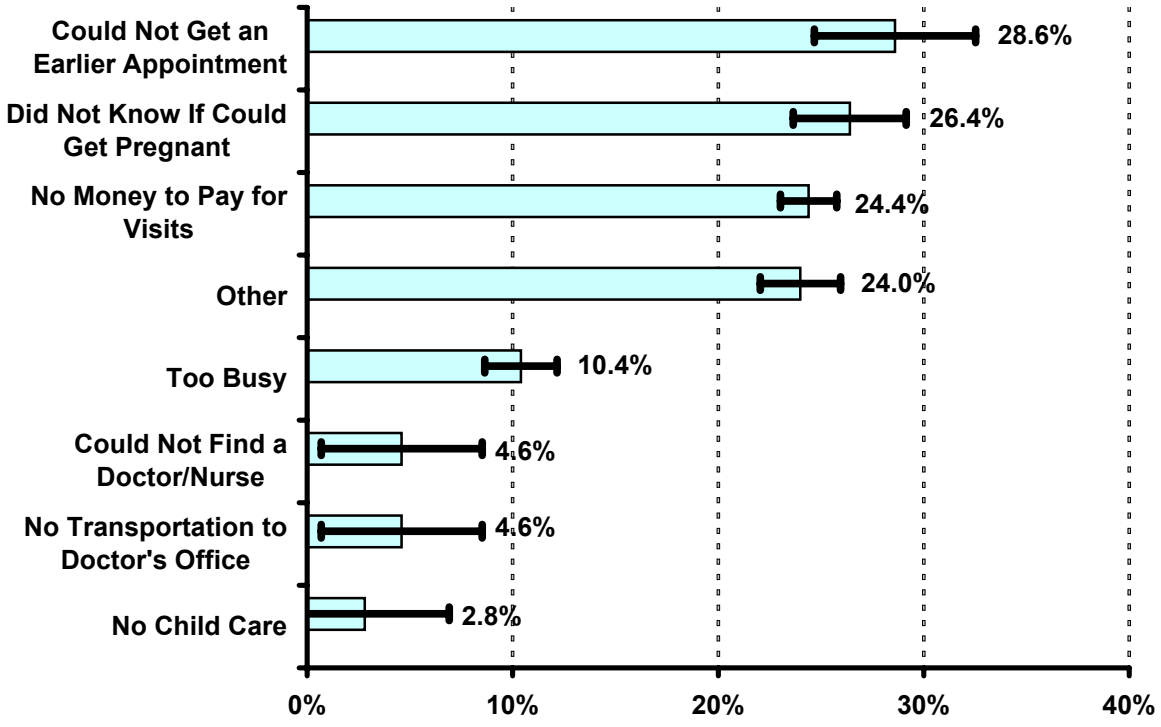
Did any of these things keep you from getting prenatal care as early as you wanted? **Check all that apply.**

Summary of Results:

Barriers to Early Prenatal Care (Figure 4.4)

- The most common barrier to receiving early prenatal care, as reported by the mother, was not being able to obtain an earlier appointment (28.6%).

Figure 4.4: Barriers to Early Prenatal Care



Survey Question #14:

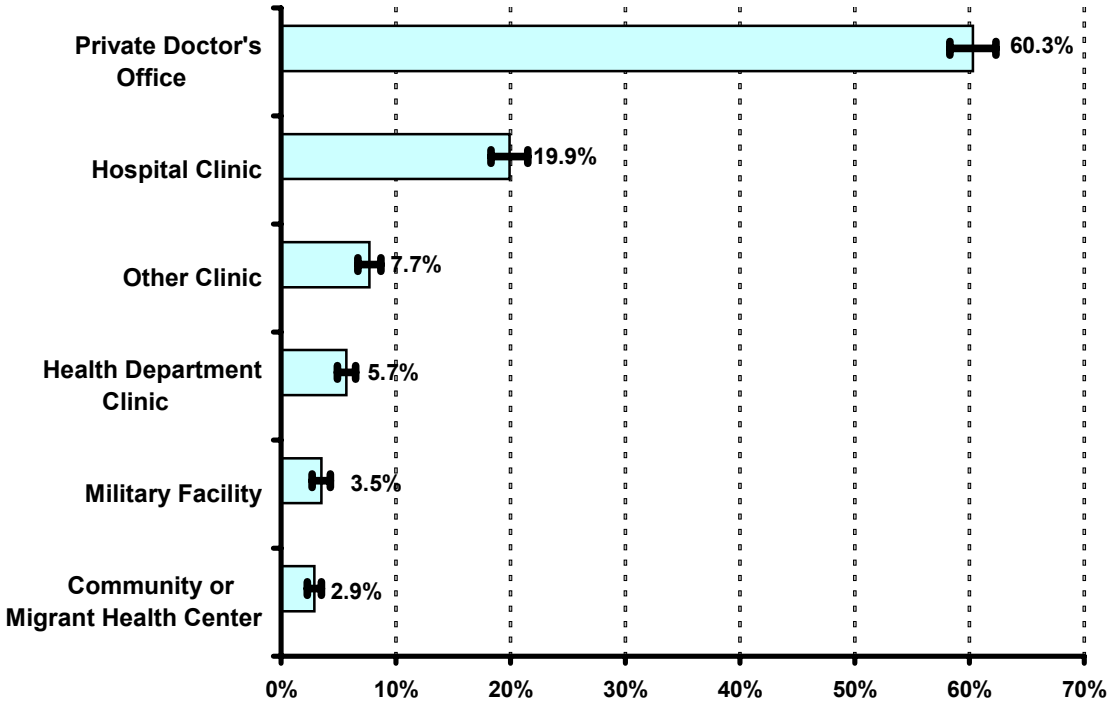
Where did you go most of the time for your prenatal visits?

Summary of Results:

Site of Prenatal Care Visits (Figure 4.5)

❒ Over half (60.3%) of the women received prenatal care services at a private doctor's office.

Figure 4.5: Site of Prenatal Care Visits



HOSPITAL STAYS FOR LABOR AND DELIVERY

WASHINGTON STATE PRAMS 1996-1998

Hospital Stay for Labor and Delivery

About four million deliveries of babies occur each year in hospitals, making childbirth the most common reason for admission to a U.S. hospital.[1] Recently, there has been widespread concern that women are restricted to shorter hospital stays after childbirth and that this practice has a negative impact on maternal and infant well-being. In 1996, Congress responded to this concern, and passed the Newborns' and Mothers' Health Protection Act of 1996. This act mandates minimum insurance coverage of 48-hour stays after vaginal deliveries, and 96-hour stays after cesarean deliveries, unless the mother and her physician decide otherwise. In addition, this Act mandates that a health care worker conduct a follow-up visit within 72 hours after delivery for women and within 48 hours for infants released from birth facilities. However, Washington State's law affecting length of maternity stay became effective June 1996 (RCW 48.43) and supercedes the federal law. The Washington State law does not assign any specific number of hours of stay following birth. Based on accepted medical practice, the mother and her physician or midwife determine the length of stay in a birth facility.

One of the criteria formulated by the American College of Pediatrics and the American College of Obstetricians and Gynecologists for discharge before 48 hours postpartum is the availability of support systems in the home, particularly in the first few days following discharge.[2] Women lacking such systems, or having other social or economic risk factors, may require longer hospital stays to ensure they are ready to assume independent responsibility for the infant's care and to allow time for the woman to bond with her infant. As uninsured women may have difficulty accessing care after leaving the hospital, it is unlikely that a shorter stay is in their best interest. In 1995, approximately 5 percent of all births in the United States, or around 200,000 births, occurred among uninsured women.[3]

From 1970 to 1992, data from National Hospital Discharge Survey (NHDS) demonstrated that the average length of stay in U.S. hospitals decreased from 3.9 to 2.1 days for vaginal deliveries, and from 7.8 to 4.0 days for caesarean deliveries.[4] During the same time period, another study using NHDS data[3] found that the average length of stay for all vaginal deliveries dropped from 2.3 days in 1988 to 1.8 days in 1995, and the average length of stay for uncomplicated vaginal deliveries fell from 2.1 days to 1.5 days. The analysis showed that several characteristics of the mother and of the hospital were independently associated with differences in length of stay for normal childbirth. These characteristics were region of the country, method of payment, and hospital size.

Survey questions in PRAMS ask women how long they stayed in the hospital when they gave birth. Washington State PRAMS data can be used to monitor trends in length of stay over time and to examine the variation by maternal characteristics and by type of insurance.

References:

[1] Agency for Health Care Policy and Research. The National Bill for Diseases Treated in U.S. Hospitals, 1987. Washington, D.C.: U.S. Department of Health and Human Services, Public Health Service; 1994. Provider Studies Research Note no. 19.

[2] American Academy of Pediatrics. Committee on Fetus and Newborn. American College of Obstetricians and Gynecologists. Guidelines on Obstetrics: Maternal and Fetal Medicine. 3rd ed. Washington D.C.: American College of Obstetricians and Gynecologists, 1992.

[3] Danel I, Johnson C, Berg C, Flowers L, Atrash H. Length of Maternal Hospital Stay for Uncomplicated Deliveries, 1988-1995: The Impact of Maternal and Hospital Characteristics. Maternal and Child Health Journal 1997 (in press).

[4] Centers for Disease Control and Prevention. Trends in Length of Stay for Hospital Deliveries -- United States, 1970-1992. MMWR 1995; 44: 335-7.

Survey Question #60 [Washington State-Added PRAMS Question]:

How long after your baby's birth did you stay in the hospital or birthing center?

Less than 12 hours (4.1%)

12-24 hours (42.3%)

2 days (25-48 hours) (32.5%)

3-4 days (49-96 hours) (17.4%)

More than 4 days (more than 96 hours) (2.8%)

I did not delivery my baby in a hospital or birthing center (0.9%)

Summary of Results:

Hospital Length of Stay After Delivery (Table 5.1 & Figure 5.1a)

- The proportion of women who stayed in the hospital 24 hours or less after delivery was 46.4 percent. These women were more likely to be:
  - 20 to 24 years of age
  - Women who had delivered an infant of normal weight (≥2500 grams)
- Asian/Pacific Islander women (49.1%) were more likely to stay in the hospital 24 hours or less after delivery compared with African American women (39.0%).
- Staying in the hospital for 24 hours or less after delivery was not associated with maternal education, marital status, Medicaid status, or their site of prenatal care visit.

Table 5.1: Women who reported hospital stays of 24 hours or less after delivery

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n=5,989)	Yes (n=2,713)	% Yes[b] (%=46.4)	95% CI (44.4-48.4)
Maternal Age	1,012	493	47.3	(41.8-52.8)
<20 years	1,544	777	53.5	(49.4-57.6)
20-24 years	2,856	1,224	44.2	(41.5-46.9)
25-34 years	576	219	40.9	(34.8-47.0)
35+ years				
Race/Ethnicity				
White	1,406	654	46.6	(44.1-49.1)
African American	957	370	39.0	(36.1-41.9)
Native American	1,246	571	46.7	(44.3-49.1)
Asian/Pacific Islander	1,203	583	49.1	(46.4-51.8)
Hispanic	1,177	535	45.7	(43.0-48.4)
Maternal Education[c]				
<12 years	1,308	622	48.2	(43.5-52.9)
12 years	1,703	799	48.0	(44.3-51.7)
>12 years	2,322	985	44.4	(41.3-47.5)
Marital Status				
Married	3,818	1,698	45.7	(43.3-48.1)
Unmarried	2,160	1,008	48.2	(44.5-51.9)
Medicaid Status				
Medicaid[d]	3,164	1,480	47.0	(44.1-49.9)
Grant Recipients[e]	1,124	525	46.2	(40.7-51.7)
Medicaid Only[f]	1,247	589	48.6	(44.1-53.1)
Medicaid Expansion[g]	793	366	45.4	(39.9-50.9)
Non-Medicaid[h]	2,809	1,223	45.8	(43.1-48.5)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	348	96	28.4	(20.2-36.6)
Normal Birthweight (≥2500 g)	5,626	2,612	47.3	(45.3-49.3)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; Prenatal care sites from PRAMS. Missing responses =45. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

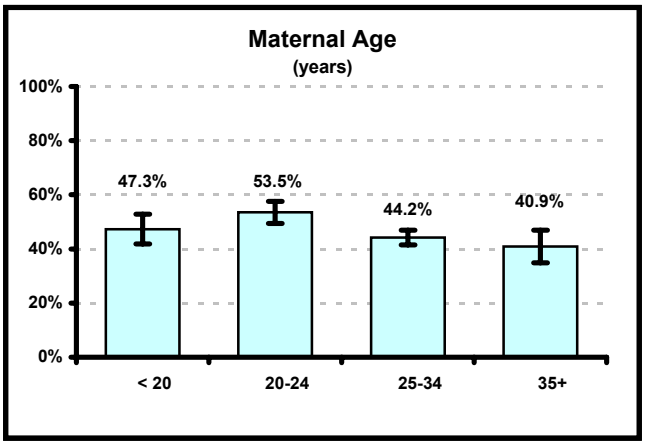
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

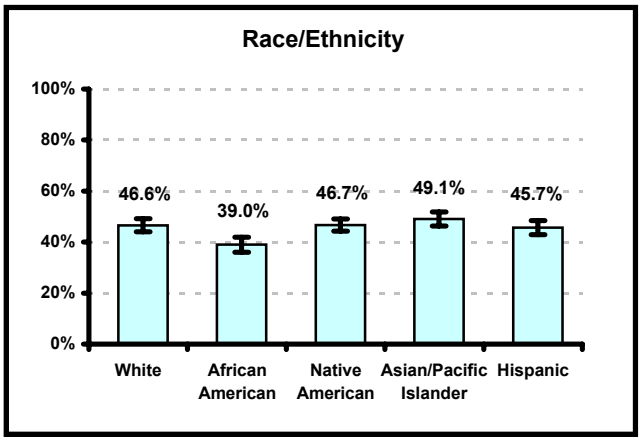
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

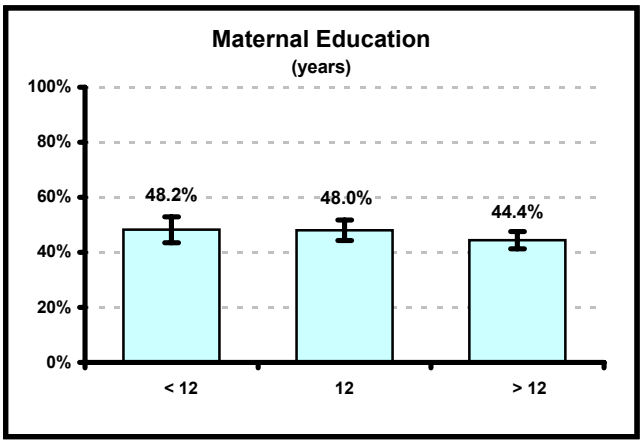
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

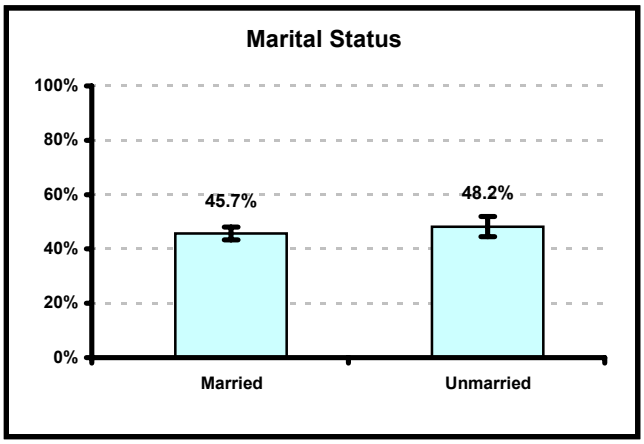
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

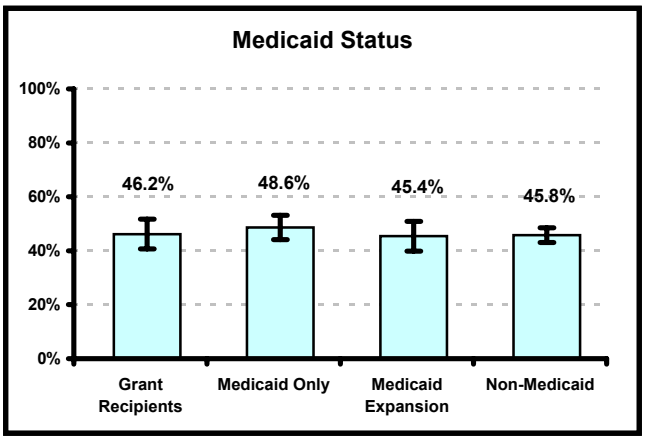
Figure 5.1a: Women who reported hospital stays of 24 hours or less after delivery
Washington State PRAMS 1996-1998

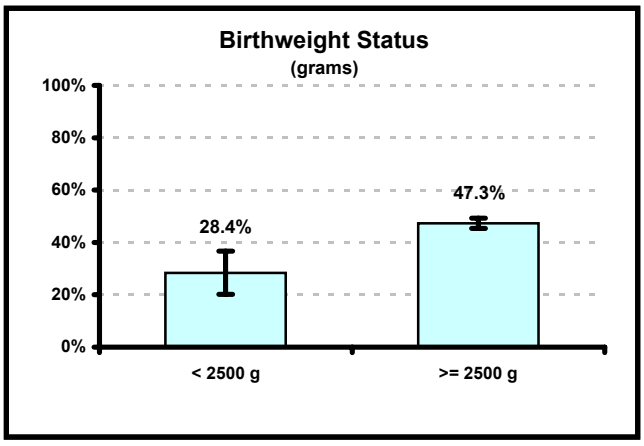












Survey Question #60 [Washington State-Added PRAMS Question]:

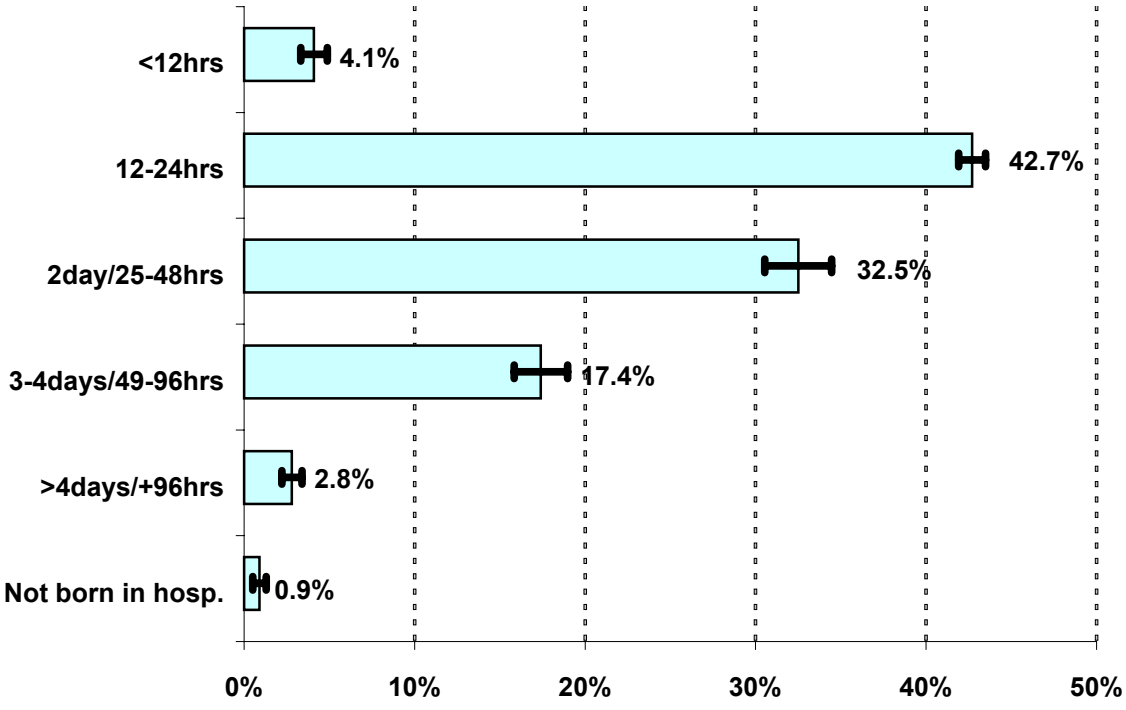
How long after your baby's birth did you stay in the hospital or birthing center?

Summary of Results:

Hospital Length of Stay After Delivery (Figure 5.1b)

- Almost half (42.7%) of women reported staying in the hospital 12 to 24 hours after delivery.

Figure 5.1b: Hospital Length of Stay After Delivery



BREAST-FEEDING

WASHINGTON STATE PRAMS 1996-1998

Breast-Feeding

Breast-feeding is promoted by the American Academy of Pediatrics, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and other national and international authorities as the single best way to feed infants.[1] Breast-feeding is associated with fewer episodes of infectious illness among infants and promotes healthy relationships between infants and mothers.[2,3,4]

Trends from the early 1980s to 1995 show significant increases in breast-feeding initiation and duration among women in the United States.[5] The most noteworthy increases are occurring among black women, women younger than 20 years, WIC participants, and women who are employed full-time; these populations traditionally have low rates of breast-feeding and duration.[5] These trends are encouraging. The Healthy People 2010 objective for breast-feeding is that at least 75 percent of mothers breast-feed their babies in the early postpartum period and at least 50 percent of mothers continue breast-feeding until their babies are 5 to 6 months old.[6]

Washington State PRAMS data can be used to assess the current prevalence of breast-feeding initiation and duration. These data can also be used to assess trends in these indicators over time.

References:

[1] American Academy of Pediatrics, Breast-Feeding and the Use of Human Milk. Pediatrics 1997; 100:1035-9.

[2] Howie P, Forsyth J, Ogston S, Clark A, Florey C. Protective Effect of Breast-Feeding Against Infection. BMJ 1990;300:11-6.

[3] Duncan B, Ey J, Holberg C, Wright A, Martinex F, Taussig L. Exclusive Breast-Feeding for at Least 4 Months Protects Against Otitis Media. Pediatrics 1993;91(5):867-72.

[4] Raisler J, Alexander C, O'Campo P. Breast-Feeding and Infant Illness: A Dose-Response Relationship. AJPH 1999;89(1):25-30.

[5] Ryan AS. The Resurgence of Breast-Feeding in the United States. Pediatrics 1997: 99(4):e12.

[6] U.S. Department of Health and Human Services. Healthy People 2010 (Conference Edition, in Two Volumes). Washington, D.C.: January 2000.

[7] Gilbert CB, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1999.

Survey Question #42:

For how many weeks did you breast-feed your new baby?

____ Weeks (32.7% of women reported breast-feeding for a specific # of weeks)

I didn't breast-feed my baby (13.5%)

I breast-fed less than 1 week (3.0%)

I'm still breast-feeding (51.8%)

Summary of Results:

Breast-feeding Initiation (Table 6.1 & Figure 6.1)

- The proportion of women who said they initiated breast-feeding after delivery was 86.5 percent. These women were more likely to be:
  - 35 years of age or older
  - Women with more than 12 years of education
  - Married
  - Non-Medicaid recipients

- According to the data, White women (87.2%) were more likely to initiate breast-feeding after delivery than Native American women (79.2%) and African American women (80.0%).

- Women who initiated breast-feeding after delivery did not differ significantly by the infant's birth weight status.

Table 6.1: Women who reported initiating breast-feeding

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n=5,822)	Yes (n=4,910)	% Yes[b] (%=86.5)	95% CI (85.1-87.9)
Maternal Age				
<20 years	971	767	76.8	(71.9-81.7)
20-24 years	1,505	1,248	84.1	(81.0-87.2)
25-34 years	2,786	2,413	89.2	(87.4-91.0)
35+ years	560	482	90.1	(86.8-93.4)
Race/Ethnicity				
White	1,383	1,213	87.2	(85.4-89.0)
African American	931	754	80.0	(77.5-82.5)
Native American	1,193	961	79.2	(77.0-81.4)
Asian/Pacific Islander	1,158	981	83.8	(81.6-86.0)
Hispanic	1,157	1,001	86.3	(84.3-88.3)
Maternal Education[c]				
<12 years	1,260	997	78.6	(74.5-82.7)
12 years	1,664	1,343	81.5	(78.6-84.4)
>12 years	2,274	2,068	93.3	(91.7-94.9)
Marital Status				
Married	3,730	3,265	88.5	(86.9-90.1)
Unmarried	2,081	1,637	81.2	(78.3-84.1)
Medicaid Status				
Medicaid[d]	3,074	2,479	81.9	(79.5-84.3)
Grant Recipients[e]	1,081	820	76.8	(72.1-81.5)
Medicaid Only[f]	1,222	1,001	83.0	(79.5-86.5)
Medicaid Expansion[g]	711	658	86.3	(82.4-90.2)
Non-Medicaid[h]	2,746	2,430	89.6	(88.0-91.2)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	313	249	85.6	(79.1-92.1)
Normal Birthweight (≥2500 g)	5,496	4,648	86.5	(85.1-87.9)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database. Missing responses =212. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

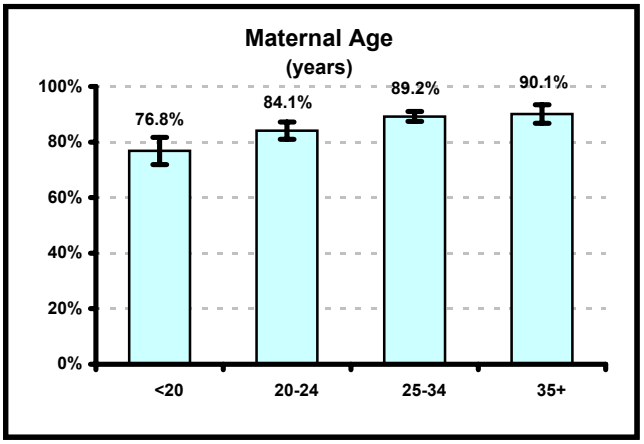
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

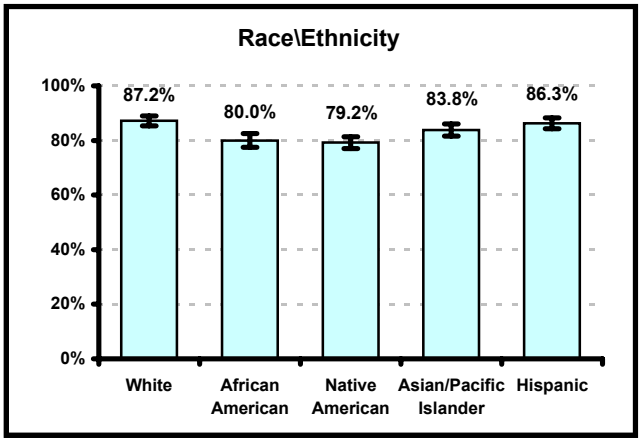
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

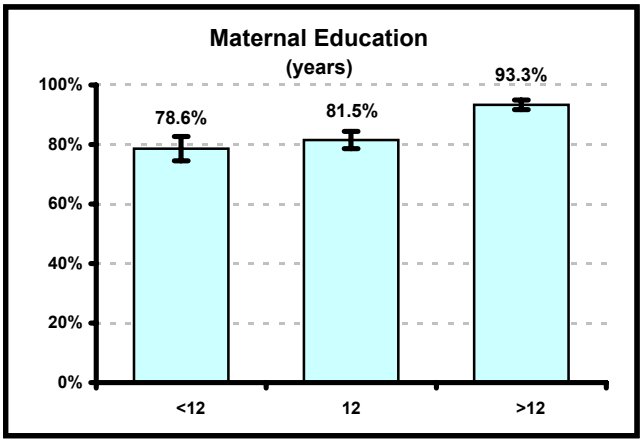
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

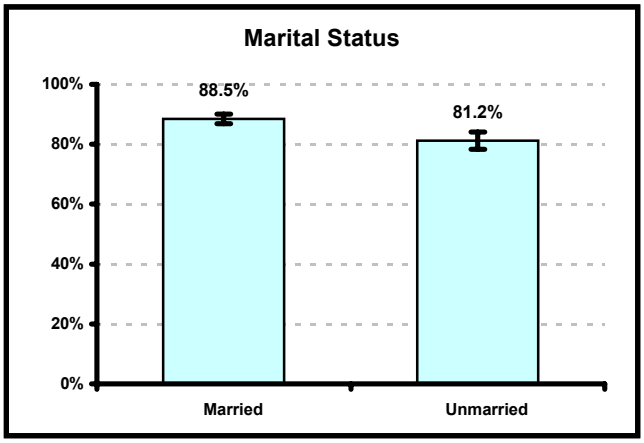
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

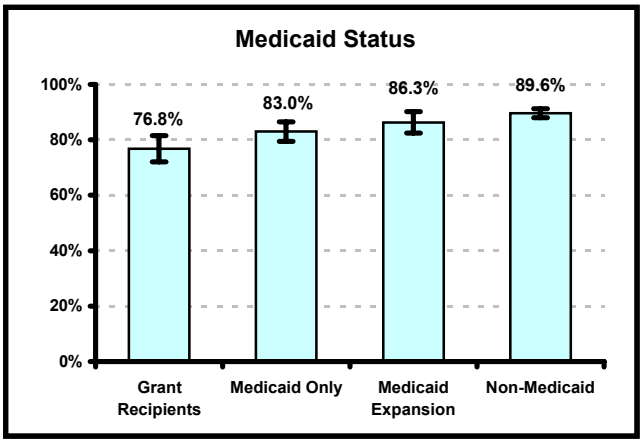
Figure 6.1: Women who reported initiating breast-feeding
Washington State PRAMS 1996-1998

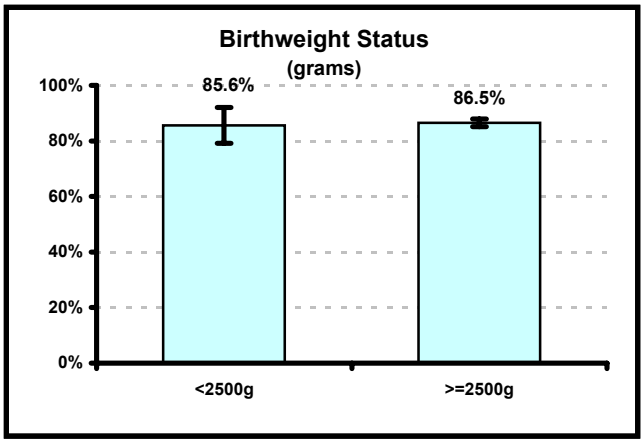












Survey Question #42:

For how many weeks did you breast-feed your new baby?

____ Weeks (32.7% of women reported breast-feeding for a specific # of weeks)

I didn't breast-feed my baby (13.5%)

I breast-fed less than 1 week (3.0%)

I'm still breast-feeding (51.8%)

Summary of Results:

Breast-feeding at One Month Postpartum (Table 6.2 & Figure 6.2)

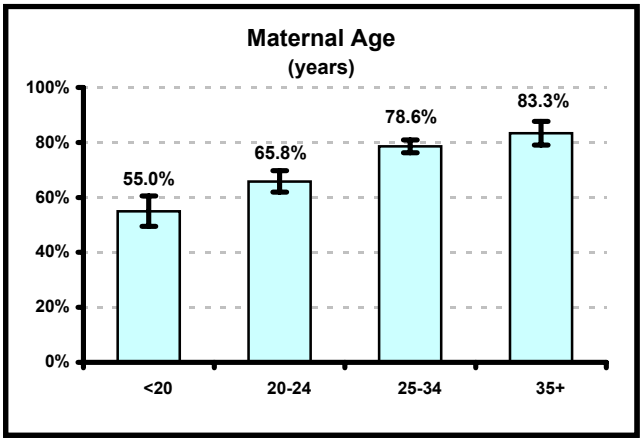
- Seventy-three percent of women breast-fed for one month after delivery. These women were more likely to be:
  - 25 years of age or older
  - Women with more than 12 years of education
  - Married
  - Non-Medicaid recipients
- Significantly more White women (73.9%) said they breast-fed for one month after delivery than African American women (65.3%) and Native American women (65.6%).
- Women who breast-fed for one month after delivery did not differ significantly by the infant's birth weight status.

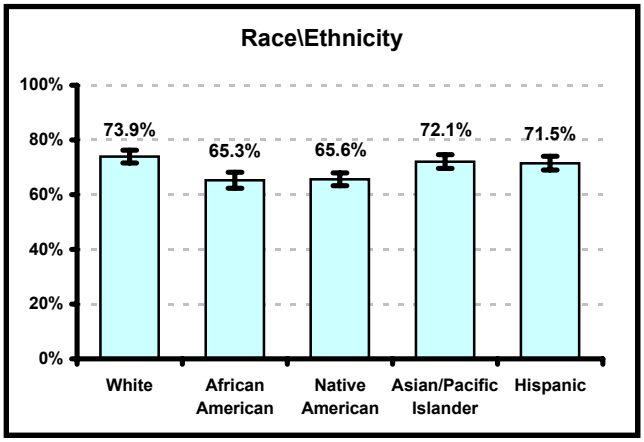
Table 6.2: Women who reported breast-feeding at one month postpartum
Washington State PRAMS 1996-1998

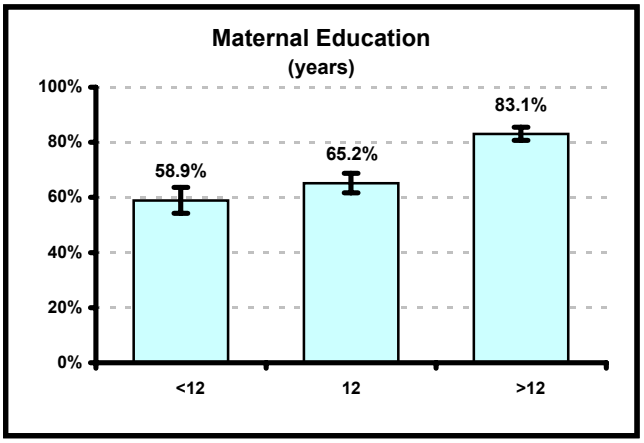
Maternal Characteristics[a]	Respondents (n=5,822)	Yes (n=4,136)	% Yes[b] (%=73.0)	95% CI (71.2-74.8)
Maternal Age				
<20 years	971	563	55.0	(49.5-60.5)
20-24 years	1,505	1,007	65.8	(61.9-69.7)
25-34 years	2,786	2,131	78.6	(76.2-81.0)
35+ years	560	435	83.3	(79.0-87.6)
Race/Ethnicity				
White	1,383	1,032	73.9	(71.9-76.3)
African American	931	619	65.3	(62.4-68.2)
Native American	1,193	802	65.6	(63.2-68.0)
Asian/Pacific Islander	1,158	852	72.1	(69.6-74.6)
Hispanic	1,157	831	71.5	(69.0-74.0)
Maternal Education[c]				
<12 years	1,260	773	58.9	(54.2-63.6)
12 years	1,664	1,072	65.2	(61.7-68.7)
>12 years	2,274	1,863	83.1	(80.7-85.5)
Marital Status				
Married	3,730	2,871	77.8	(75.8-79.8)
Unmarried	2,081	1,261	60.2	(56.5-63.9)
Medicaid Status				
Medicaid[d]	3,074	1,982	64.1	(61.2-67.0)
Grant Recipients[e]	1,081	611	56.7	(51.0-62.4)
Medicaid Only[f]	1,222	821	64.7	(60.2-69.2)
Medicaid Expansion[g]	711	550	71.9	(66.6-77.2)
Non-Medicaid[h]	2,746	2,153	79.0	(76.8-81.2)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	313	205	72.7	(64.5-80.9)
Normal Birthweight (≥2500 g)	5,496	3,921	73.0	(71.2-74.8)

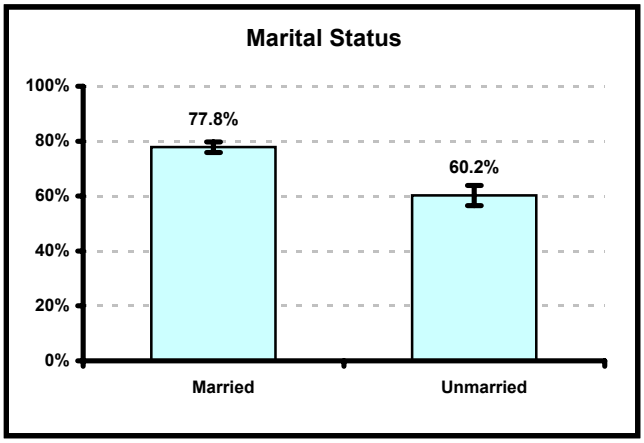
[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database.
Missing responses =212. CI = Confidence Interval. White includes other/unknown (3.5%).
[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).
[c]10% or more of the maternal education data is missing from birth certificate data.
[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

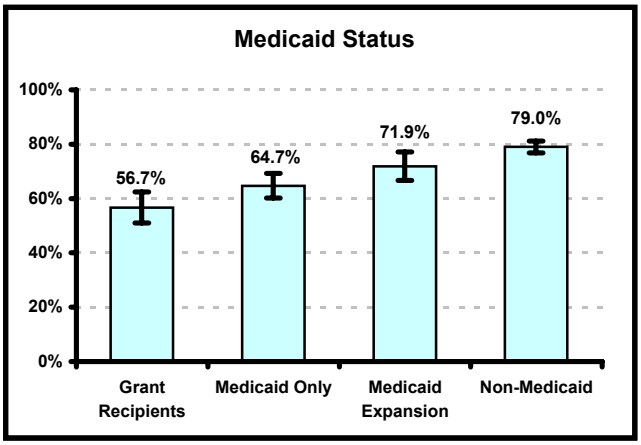
Figure 6.2: Women who reported breast-feeding at one month postpartum
Washington State PRAMS 1996-1998

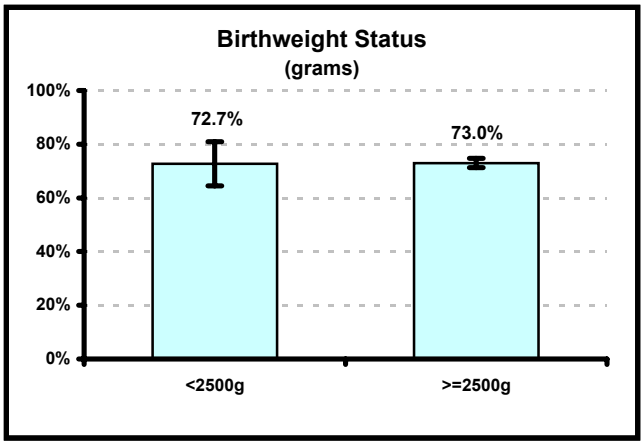












Survey Question #42:

For how many weeks did you breast-feed your new baby?

____ Weeks (32.7% of women reported breast-feeding for a specific # of weeks)

I didn't breast-feed my baby (13.5%)

I breast-fed less than 1 week (3.0%)

I'm still breast-feeding (51.8%)

Summary of Results:

Breast-feeding at Two Months Postpartum (Table 6.3 & Figure 6.3a)

- An estimated 62.8 percent of women reported breast-feeding two months after delivery. These women were more likely to be:
  - 25 years of age or older
  - Women with more than 12 years of education
  - Married
  - Non-Medicaid recipients

- White women (63.9%) were significantly more likely to have breast-fed for two months after delivery than African American women (53.8%) or Native American women (54.1%).
- Women who breast-fed for two months after delivery did not differ significantly by the infant's birth weight status.

Table 6.3: Women who reported breast-feeding at two months postpartum

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n=5,822)	Yes (n=3,513)	% Yes[b] (%=62.8)	95% CI (60.8-64.8)
Maternal Age				
<20 years	971	438	40.7	(35.4-46.0)
20-24 years	1,505	842	54.0	(49.9-58.1)
25-34 years	2,786	1,832	69.0	(66.5-71.5)
35+ years	560	401	79.1	(74.4-83.8)
Race/Ethnicity				
White	1,383	894	63.9	(61.4-66.4)
African American	931	516	53.8	(50.7-56.9)
Native American	1,193	665	54.1	(51.6-56.6)
Asian/Pacific Islander	1,158	733	61.7	(59.0-64.4)
Hispanic	1,157	705	60.5	(57.8-63.2)
Maternal Education[c]				
<12 years	1,260	633	47.6	(42.9-52.3)
12 years	1,664	874	53.1	(49.4-56.8)
>12 years	2,274	1,645	74.2	(71.5-76.9)
Marital Status				
Married	3,730	2,525	69.0	(66.8-71.2)
Unmarried	2,081	984	46.0	(42.3-49.7)
Medicaid Status				
Medicaid[d]	3,074	1,612	51.8	(48.9-54.7)
Grant Recipients[e]	1,081	477	43.1	(37.4-48.8)
Medicaid Only[f]	1,222	674	53.0	(48.5-57.5)
Medicaid Expansion[g]	771	461	60.5	(54.8-66.2)
Non-Medicaid[h]	2,746	1,900	70.1	(67.6-72.6)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	313	154	56.6	(47.2-66.0)
Normal Birthweight (≥2500 g)	5,496	3,350	63.1	(61.1-65.1)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database.
Missing responses =212. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

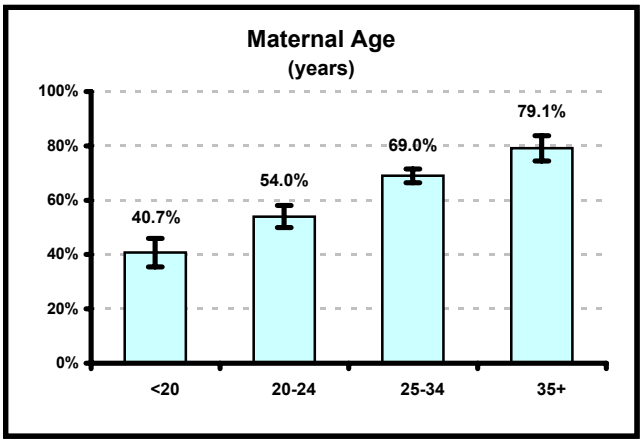
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

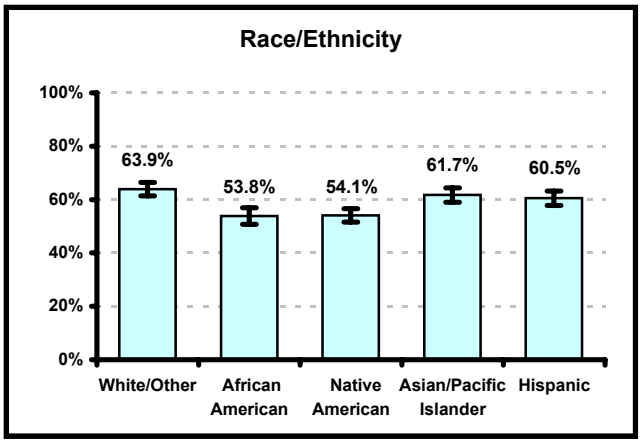
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

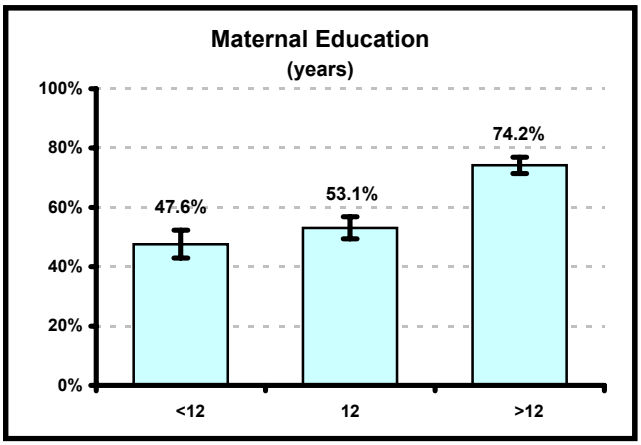
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

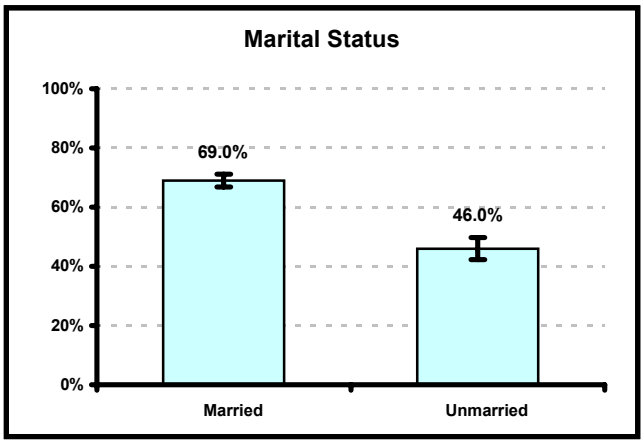
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

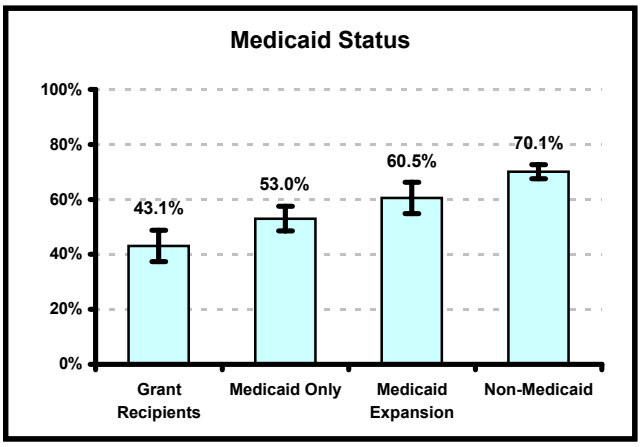
Figure 6.3a: Women who reported breast-feeding at two months postpartum
Washington State PRAMS 1996-1998

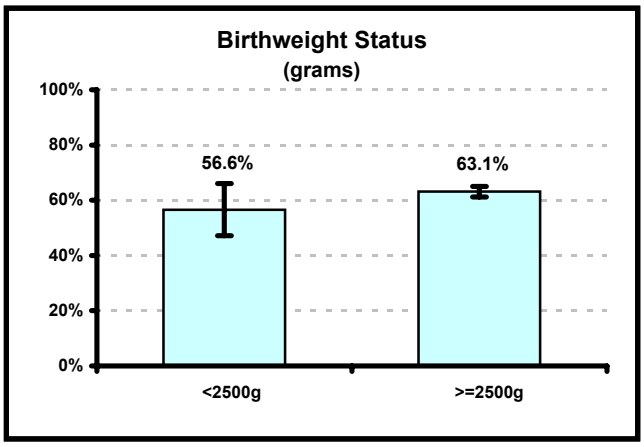












Survey Question #42:

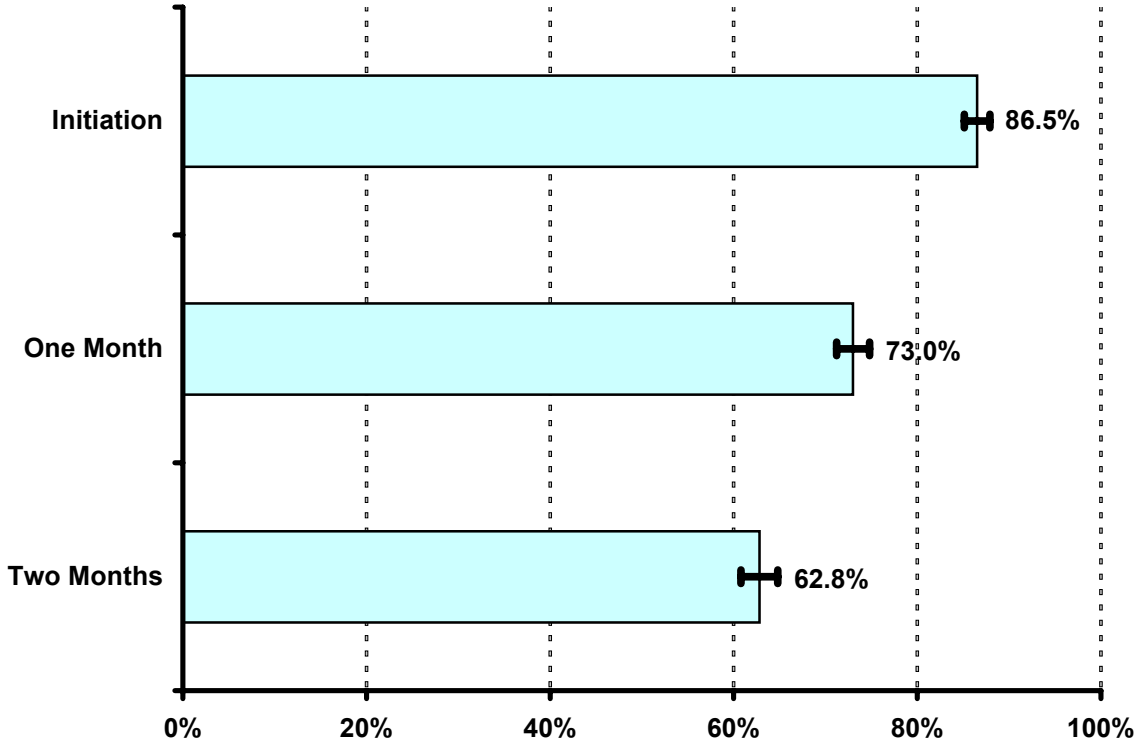
For how many weeks did you breast-feed your new baby?

Summary of Results:

Breast-feeding Initiation and Duration (Figure 6.3b)

- Almost 90 percent of women initiated breast-feeding after the birth of their baby. However, the proportion of women who continued to breast-feed after delivery declined from 73.0 percent at one month to 62.8 percent at two months.

Figure 6.3b: Breast-feeding Initiation and Duration



Survey Question #16c:

During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about breast-feeding your baby.

No (13.1%)

Yes (86.9%)

Summary of Results:

Prenatal Care Provider Discussion of Breast-feeding (Table 6.4 & Figure 6.4)

- Nearly 87 percent (86.9%) of women said a prenatal care provider discussed breast-feeding. These women were more likely to be:
  - Teenagers
  - Hispanic
  - Women with less than a high school education
  - Medicaid recipients
- Women who reported prenatal care provider discussion regarding breast-feeding were less likely to have heard about it at a private doctor's office (84.3%) than at a hospital clinic (90.2%), health department clinic (91.7%), or at an other type of clinic (92.0%).
- The proportion of women who said a prenatal care provider discussed breast-feeding did not differ significantly by their marital status or the infant's birth weight status.

Table 6.4: Women who reported a prenatal care provider discussed breast-feeding.

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Respondents (n= 5,883)	Yes (n= 5,231)	% Yes[b] (%= 86.9)	95% CI (85.5-88.3)
Maternal Age				
<20 years	990	934	91.9	(88.6-95.2)
20-24 years	1,524	1,384	89.3	(86.8-91.8)
25-34 years	2,808	2,442	85.6	(83.6-87.6)
35+ years	560	470	81.7	(76.8-86.6)
Race/Ethnicity				
White	1,395	1,195	85.6	(83.8-87.4)
African American	947	857	90.8	(89.0-92.6)
Native American	1,217	1,096	89.9	(88.3-91.5)
Asian/Pacific Islander	1,154	986	85.8	(83.8-87.8)
Hispanic	1,170	1,097	93.9	(92.5-95.3)
Maternal Education[c]				
<12 years	1,276	1,201	93.3	(90.8-95.8)
12 years	1,671	1,497	87.5	(85.0-90.0)
>12 years	2,305	1,978	84.8	(82.6-87.0)
Marital Status				
Married	3,770	3,296	86.1	(84.3-87.9)
Unmarried	2,104	1,928	89.3	(86.8-91.8)
Medicaid Status				
Medicaid[d]	3,097	2,868	90.1	(88.1-92.1)
Grant Recipients[e]	1,096	1,007	89.8	(86.3-93.3)
Medicaid Only[f]	1,228	1,140	91.0	(88.1-93.9)
Medicaid Expansion[g]	773	721	89.3	(85.4-93.2)
Non-Medicaid[h]	2,771	2,355	85.2	(83.2-87.2)
Birthweight Status (grams)				
Low Birthweight (<2500 g)	333	294	86.1	(79.2-93.0)
Normal Birthweight (≥2500 g)	5,536	4,923	87.0	(85.6-88.4)
Site of Prenatal Care Visit				
Hospital Clinic	1,586	1,450	90.2	(87.7-92.7)
Health Department Clinic	517	484	91.7	(87.2-96.2)
Private Doctor's Office	2,711	2,308	84.3	(82.3-86.3)
Military Facility	239	220	91.5	(85.4-97.6)
Community or Migrant's Health Center	251	234	91.0	(84.1-97.9)
Other Clinic	521	484	92.0	(87.9-96.1)

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; Prenatal Care Sites from PRAMS. Missing responses =151. CI = Confidence Interval. White includes other/unknown (3.5%).

[b]Percentage weighted to Washington State Birth Population (Total N = 207,831).

[c]10% or more of the maternal education data is missing from birth certificate data.

[d]Medicaid - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

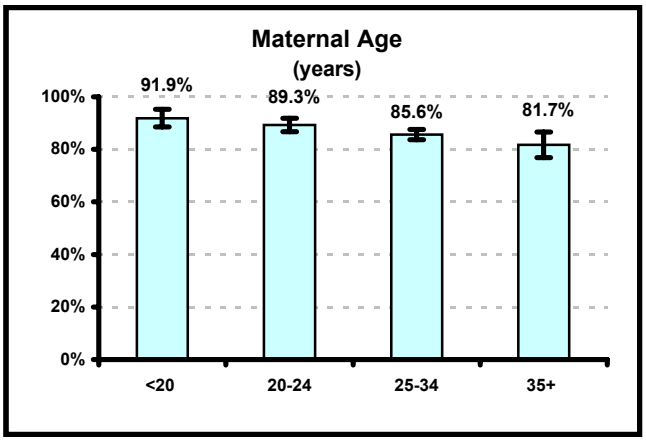
[e]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

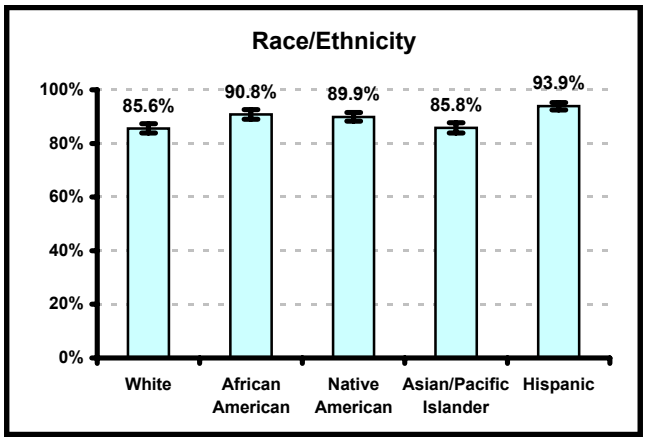
[f]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

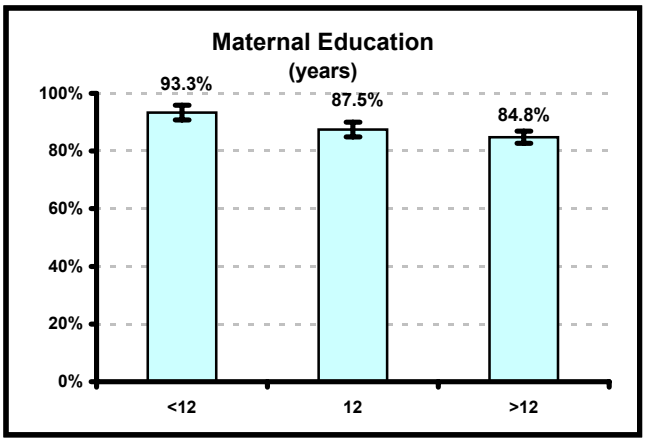
[g]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

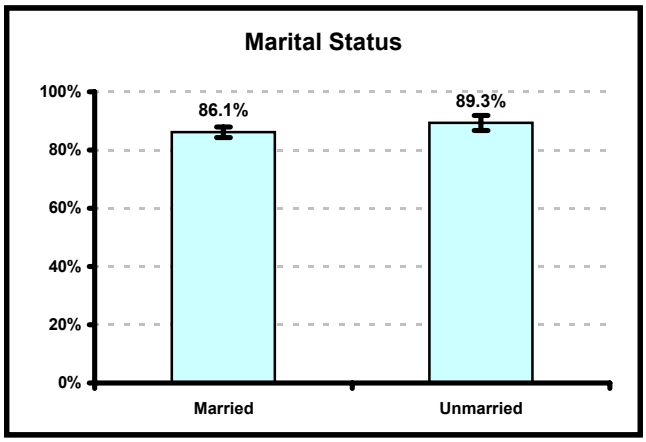
[h]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

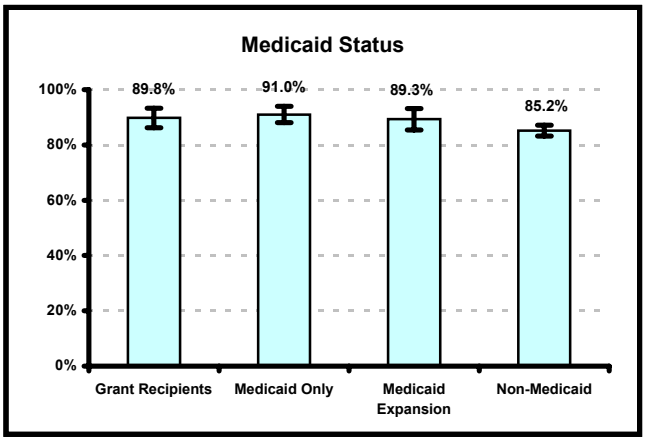
Figure 6.4: Women who reported a prenatal care provider discussed breast-feeding.
Washington State PRAMS 1996-1998











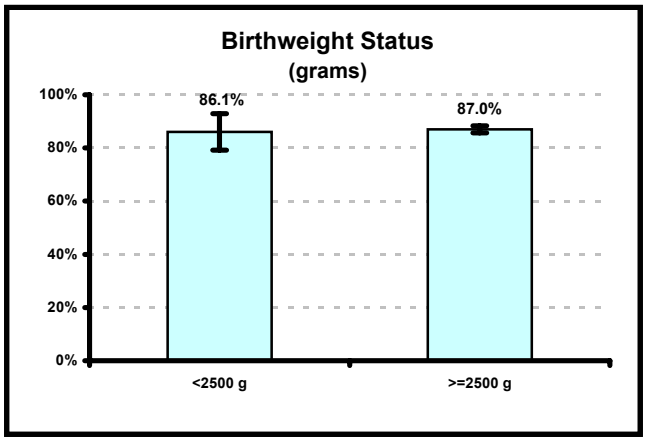
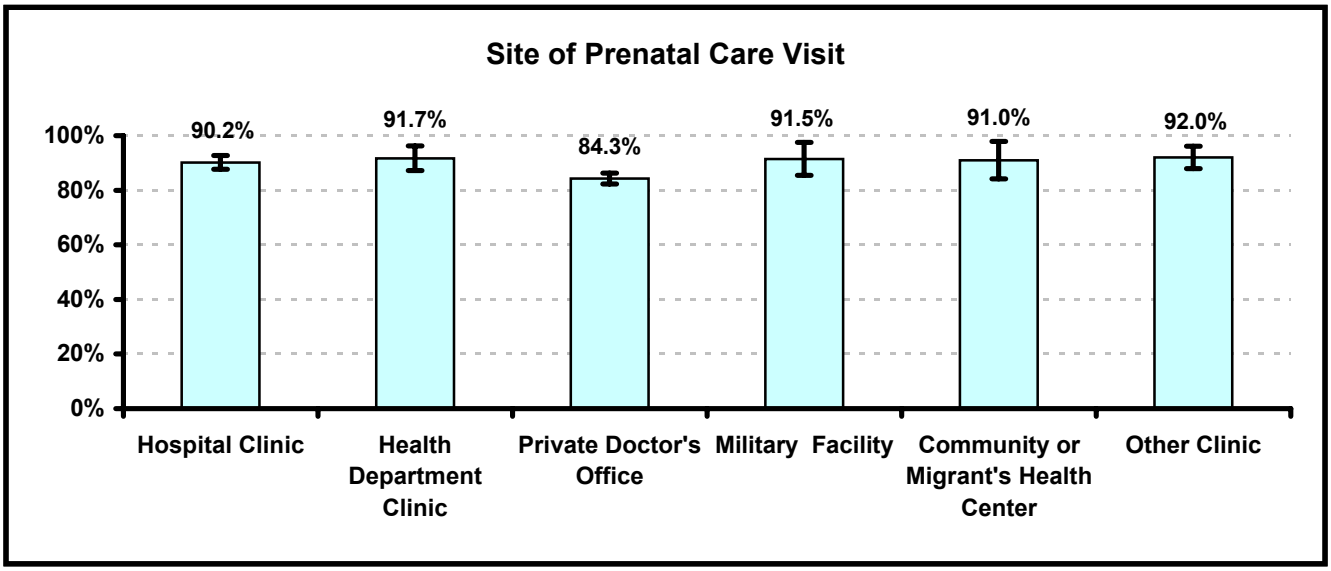


Figure 6.4 (cont'd): Women who reported a prenatal care provider discussed breast-feeding.
Washington State PRAMS 1996-1998



APPENDICES

WASHINGTON STATE PRAMS 1996-1998

Data Collection

Methodology

Data Sources. Three data sources are used to create a final, weighted PRAMS analysis data set: birth certificate data, operational data, and questionnaire data. The PRAMS analysis data set cannot be produced unless all three sources of data are in place.[1]

i. ***Birth Certificate Data.*** Birth certificates are essential to PRAMS data collection for three reasons: 1) They provide the sampling frame from which births are stratified and then randomly selected for PRAMS surveillance; 2) PRAMS data collected from mothers are weighted with birth certificate information; and 3) Birth certificates serve as a source of demographic and clinical information about the sampled mother and the infant in Washington State.

ii. ***Operational Data.*** PRAMS operational data are generated by PRAMTrac, a customized tracking software program developed by the CDC to assist the Project Coordinator and the Data Manager in PRAMS activities. PRAMTrac is supplied to states by CDC; CDC provides training in the use of the software. PRAMTrac aids in monitoring data collection activities for each batch and generates monthly batch reports that summarize the results of the data collection effort. Sampled women are tracked until they either complete a questionnaire or are classified as a non-respondent. Operational data generated by PRAMTrac are used to calculate response rates to monitor the quality of operations. They are also used for analysis of PRAMS survey methodology.

iii. ***Questionnaire Data.*** Self-reported data from sampled women are collected by mail and by telephone. The PRAMS questionnaire serves as the principal source of maternal behavioral information for the time before, during, and after the mother's most recent pregnancy.

Method of Surveillance. Standardized data collection methods for the PRAMS survey were developed by CDC to allow for comparisons among states and for single-state or multi-state analysis.[2] PRAMS is a "mixed mode" surveillance system that combines two modes of data collection. The mailed questionnaire is the primary data collection method. Up to two self-administered surveys are mailed to sampled women, and then multiple attempts to follow-up nonrespondents are conducted by telephone.[1,2,3] The methodology behind mail/telephone survey methods used by CDC is based on research conducted by Don Dillman.[4] One key component of his approach is to make numerous and varied random contacts with sample mothers.[3,4]

Data Collection Instruments

The PRAMS Questionnaire. In 1987, Phase 1 of the PRAMS questionnaire was developed with the aid of numerous individuals within and outside of CDC. To create the questionnaire, an extensive list of potential topics were identified and researched by staff in the Division of Reproductive Health at CDC. From this list, questions were developed and pretested using cognitive techniques and revised according to pretest results. This questionnaire was used by the original PRAMS states from Fall 1988 until it was revised in 1989.[1,2]

In 1989, the Phase 1 questionnaire was evaluated and revised by CDC and participating states. This revision resulted in the Phase 2 questionnaire, which was implemented in 1990. Although the questionnaire maintained its original structure, selected questions were revised, some were deleted, and new questions were added. [1,2]

In 1994, CDC collaborated with the participating states to revise and develop a Phase 3 questionnaire. As with the first and second questionnaires, a list of potential topics was extensively researched. The original structure of the questionnaire was retained, but several questions were revised, dropped or added.[1,2] During the revision process, a set of standard state-specific questions was developed. States were able to select questions from the standard set, use existing state-developed questions, or develop new questions of their own.[1]

The Phase 3 questionnaire is 14 pages in length and has a colorful cover designed by Washington State PRAMS staff. This questionnaire is slightly smaller than an 8 1/2" x 11" sheet of paper, and contains an extra page for comments from the mother. The questionnaire contains a total of 66 questions; the first 52 questions are core questions and the remaining 14 are state-specific questions.

The data for this report, which is from surveillance period April 1996 through December 1998, have been drawn from the Phase 3 questionnaire.

Criteria for Selection of Questions. The following criteria were used to determine the content areas of the questionnaire[1]:

- ❒ The usefulness of the information to develop and target specific interventions to reduce infant morbidity and mortality.
- ❒ The likelihood that valid information can be collected from the mother two to six months after delivery.
- ❒ The estimated prevalence of the behavior, attitude, or experience.
- ❒ The availability of state-level information from other data sources.
- ❒ The importance of the information as a co-variate for the association between behavior, attitude, or experience, and infant mortality and mortality.
- ❒ The likelihood that sensitive information can be elicited from the mother.

- ❒ The state's need for the information for the year 2010 health objectives or other program needs.

Types of Questions

Core Questions. The core portion of the survey is used by all participating PRAMS states and addresses the following topic areas:

- ❒ **Obstetric history/risk factors:** a history of previous live births, low birth weight delivery, premature delivery; confirmation of pregnancy status, prepregnancy weight and height.
- ❒ **Mother's feelings about the timing of pregnancy**
- ❒ **Maternal economic status:** Health insurance participation, Medicaid participation, WIC participation, housing density, household size after delivery, and sources of family income.
- ❒ **Birth control utilization at conception**
- ❒ **Prenatal care:** Timing of prenatal care initiation, satisfaction with prenatal care, barriers to prenatal care, number of prenatal care visits per month, site of prenatal care visit, source of prenatal care payment, and prenatal provider discussion of maternal risk behaviors.
- ❒ **Folic acid awareness**
- ❒ **Prenatal maternal behaviors and experiences:** Cigarette smoking, alcohol use, psychosocial stress during the 12 months prior to delivery, and physical abuse before and during pregnancy.
- ❒ **Prenatal hospitalization**
- ❒ **Labor and delivery for mother and infant:** Hospital length of stay for mother and infant, source of payment for delivery
- ❒ **Infant health:** Neonatal Intensive Care (NICU) utilization, breast-feeding, infant smoke exposure, sleep position, well and ill baby care

State-Developed questions. The state-specific portion is composed of questions developed by the Washington State PRAMS Advisory Committee to meet Washington State's needs. The process for developing the questions involved: committee selection of high priority topics; development of questions pertaining to the priority topics; revision of questions to fit a survey format; and ranking questions to determine those to be included in the survey. After the questions were selected, the state-specific questions were pre-tested with a variety of individuals from various backgrounds. The Washington state-specific component covers the following topic areas:

- ❒ Mother's perception of husband or partner's feelings about timing of pregnancy
- ❒ Household size and income at conception
- ❒ Prenatal care provider discussion of maternal risk behaviors: Postpartum depression, weight gain during pregnancy, family history of diseases or birth defects, and genetic testing for birth defects or genetic diseases
- ❒ Social support availability for mother during pregnancy and after delivery
- ❒ Emotional support by husband or partner during pregnancy
- ❒ Hospital length of stay after delivery for mother
- ❒ Postpartum birth control utilization
- ❒ Infant safety: smoke alarm in home, water heater temperature, car seat use, and firearms in home

Mode of Questionnaire Administration. Survey methodology emphasized the importance of using the appropriate questionnaire format for the mode in which the respondent will complete the questionnaire. Because PRAMS employs two modes, two types of questionnaire are required.[1]

i. ***Self-administrated Questionnaire.*** In mail surveillance, the self-administrated questionnaire booklet is mailed to all sampled women. The questionnaire is designed to be read and filled out by the respondent without the presence of an interviewer. All instructions and skips are clearly noted in the booklet so that the respondent can complete the questionnaire by herself.

ii. ***Interviewer-administrated Questionnaire.*** In telephone follow-up, however, an interviewer must administer the questionnaire. Therefore, the layout must be formatted differently. The interviewer-administrated questionnaire includes prompts and instructions for the interviewer that are not read aloud to the respondent. The interviewer-administrated questionnaire format ensures that all interviewers deliver questions and instructions uniformly and consistently with the mail questionnaire.

Translations of Questionnaires. The Washington State PRAMS questionnaire is available in English and Spanish. Formatting and appearance are the same in both versions of the questionnaire. Translations of the PRAMS questionnaire (mail and telephone versions) into Spanish are completed by CDC, with state reviewers. Translations of the questionnaires by a single source ensure consistency of question content across all states and populations.

Data Collection Procedures

Timing and Contacts. Every month, a stratified random sample of 100-250 new mothers (who are two to six months postpartum) is selected from a frame of eligible Washington State birth certificates to be used for the PRAMS survey. As multiple contacts have been demonstrated to increase response rates[4], this methodology is employed in PRAMS. Below is the sequence of contacts for Washington State PRAMS surveillance.[1,2,3]

i. ***Preletter.*** The preletter is mailed to all sampled mothers. The preletter introduces the mother to PRAMS and informs her that she will be receiving a PRAMS questionnaire packet in the mail.

ii. ***Initial PRAMS Questionnaire Packet.*** The initial mail questionnaire packet is sent to all sampled mothers 7 days after the preletter. The packet contains the following items: a personalized letter explaining PRAMS; the 14-page questionnaire booklet containing a self-addressed return envelope with postage provided; a question-and-answer brochure that contains addition information and answers to questions frequently asked about PRAMS; a calendar, as a memory aid; and a participation incentive.

iii. ***Tickler.*** The tickler serves as a thank you/reminder letter and is sent to all sampled mothers 10 days after the initial mailing, except for those who have responded, refused, or whose mail has been returned undelivered.

iv. ***Second Mail Questionnaire Packet.*** The second mail questionnaire packet is sent 14 days after the tickler to all sampled mothers who have not responded or refused.

v. ***Telephone Follow-up.*** Washington State PRAMS staff telephone mothers who do not respond 14 days after the second mailing of the questionnaire. Interviewers call women to encourage completion of an interviewer-administered survey over the telephone.

Mail/Phone schedule. The Mail/Phone phase of the project is managed by the Operations Manager. The Operation manager coordinates the activities of the Survey Assistants, who assist with the mailings, data entry and telephone interviews. The following is a list of the schedule of events for the Mail/Phone Survey process the batch period[1]:

- ❒ **Day 1:** Sample batch and create: BCENTRY.DAT, list of long addresses, list of infants at risk of death, list of Medicaid recipients, and a list of Hispanic mothers in sample. Download BCENTRY.DAT into PRAMTrac.
- ❒ **Day 2:** Clean up any mothers' records with blank last name, correct addresses, eliminate any out of state residents, etc.
- ❒ **Day 3:** Prepare and mail pre-letter. Identify/verify status of at risk infants.

- ❒ **Day 10:** Prepare and mail the first survey with a return address packet. Identify multiple births and select which infant to follow in the survey.
- ❒ **Day 20:** Prepare and mail a reminder letter (Tickler).
- ❒ **Day 34:** Prepare and mail second survey with return address packet.
- ❒ **Day 41:** Forward to phone phase. Print a listing of new moms and begin locating phone numbers. Check Internet listings or contact Directory Assistance and Medical Assistance Administration for additional phone listings.
- ❒ **Day 48:** Begin calling moms. During the next 3 weeks, at least 15 attempts are made to contact the mother. Calls are made during the morning, afternoon and evening, seven days a week. Calls are conducted both to English and Spanish speaking survey recipients.
- ❒ **Day 75:** Clean up, close the batch, and export the files to CDC as identified in CDC instructions.

References:

[1] Pregnancy Risk Assessment Monitoring System (PRAMS): CDC Model Surveillance Protocol 1999. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1999.

[2] Pregnancy Risk Assessment Monitoring System (PRAMS) Surveillance Report: 1993-1994. Maternal Health Assessment Section, Community and Family Health, Washington State Department of Health, 1996.

[3] Colley Gilbert B, Johnson CH, Morrow B, Ahluwalia IB, Gaffield ME, Fischer L, Rogers M, Whitehead N. PRAMS 1997 Surveillance Report. Atlanta, GA: Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1999.

[4] Dillman DA. Mail and telephone surveys: the total design method. New York: John Wiley & Sons, 1978.

The Sampling and Weighting Process

The purpose of the PRAMS data is to provide state-specific estimates of maternal and child health indicators for Washington State mothers who delivered a live born infant.

Sampling Process

Producing a sample of mothers has two steps, constructing the frame and drawing the sample.

Constructing the Sampling Frame. The sampling frame is prepared from monthly batches of Washington State birth certificates. Birth data are read into a SAS file that creates five categories by race/ethnicity. The sampling frame is then created by excluding records for the following reasons: 1) the infant was born less than 61 days ago (these infants were eligible for inclusion in a later sampling frame) or more than 151 days from the projected survey arrival date; 2) the infant was born out of state; 3) the mother was not a Washington State resident; 4) the mother's maiden name was missing; or 5) the infant resulted from a multiple birth and was not the one infant from the multiple birth selected for inclusion in the survey. The infant record selected from a multiple birth is based on the correspondence between its order at delivery and the time of year the birth occurred (the first born of twins is selected if the birth occurred January-June, the second born is selected if the birth occurred July-December). (NOTE: Exclusions of Adoptions: If an infant is adopted prior to sampling, the birth record is excluded from the sampling frame. Birth files are amended when an adoption takes place. Adoptions are identified and excluded by Vital Statistics prior to sending the birth certificate date to Washington State PRAMS. Adoptions records are continuously updated).[1] For those infants who were not included in the PRAMS sample, efforts were made to compare their profile as a group to the PRAMS frame and to determine whether the population and sample strata differ significantly from the frame. Mothers of infants who died were included in the frame and were contacted through a separate mailing. Respect for their loss and sensitivity in questioning was considered when contacting these mothers.[2]

Drawing the sample. Between the 1st and the 5th of every month, the Washington State Center for Health Statistics sends a birth certificate file to be used as input for the PRAMS sampling program. Most of the infants in the birth certificate files are either two or three months of age when sampled by PRAMS and mothers are contacted up to six months postpartum. Sampling on a monthly basis continues to ensure that mothers are contacted in a timely manner and that there is a balanced workload for PRAMS staff. The birth file is sent for weighting on or before September for the previous year. [1]

Sampling Strata

The Washington State PRAMS sample for this report was stratified by race/ethnicity, based on birth certificate information. From April 1996 through December 1998, the five sampling strata of racial/ethnic groups were ethnic Hispanic (of any race), non Hispanic African American,

Asian/Pacific Islander, Native American and the combination of white and other/unknown. Oversampling of subjects by race other than white was conducted to increase the reliability of estimates for these groups.[1]

Within each sampling strata, each record has an equal probability of being selected (without replacement). The sampling targets for each stratum were 400 completed surveys, a total of approximately 2000 surveys per year. This sampling target is CDC PRAMS minimum recommended sample size to enable stratum specific analyses on a yearly basis.[1]

Survey Response Rates

From April 1996 through December 1998, 8,563 mothers who delivered infants were sent the Washington State PRAMS survey. Among those mothers who were surveyed, 6,034 (70.5%) responded to the survey. The majority of nonrespondents to the survey were comprised of mothers who did not return the questionnaire or could not be contacted because of incorrect address and/or phone number. Other possible reasons that may explain the survey nonresponse rate are phone and mail refusals, or a language barrier.

In late 1993, Spanish language surveys and Spanish language phone follow-up became available which contributed to an improvement in the Hispanic response rate. Translation to other non-English speaking populations is not available at this time for states participating in PRAMS.

Birth certificate information from non-respondent and respondent mothers to the PRAMS survey, which was administered from April 1996 through December 1998, is displayed in Table 7.1. The results show that maternal attributes associated with a lower survey response rate were maternal age younger than 20, African American and Native American race, unmarried, receiving Medicaid, and having delivered a low birth weight infant (< 2500 grams). However, the survey response rates increased with mother's educational level. Approximately 12.8% of the maternal education data was missing from the Washington State birth certificates.

Response Bias. When survey completion is less than 100 percent and respondents are not representative of the sampled population, response bias can occur. (In most cases, survey respondents are of higher socio-economic status and healthier than are nonrespondents to questionnaires). Response bias can be reduced by ensuring a high response rate. The CDC PRAMS considers a response rate of 70 percent as a minimum threshold below which unacceptable response bias may occur.[2]

Weighting Process

The Washington State PRAMS survey is designed to provide state estimates about resident mothers who delivered live born infants during the sampling period. Washington State PRAMS data can be weighted to obtain statewide birth population estimates, because the data is based on a probability sample of Washington State birth certificates.

Each PRAMS respondent receives an analysis weight, which is equivalent to the number of mothers that she represents in the population. The analysis weight is the product of three sub-components: sampling weight, nonresponse weight, and frame noncoverage weight.[2] An

analysis weight of zero was assigned to mothers who did not respond to the PRAMS questionnaire.

i. ***Sampling Weights.*** The sampling weights adjust for the effect of the sampling design. The sampling weights are calculated by dividing the number of mothers on the sampling frame for a given stratum by the number of mothers sampled for that stratum. This weight is the reciprocal of the sampling fraction for the sample, in each sampling stratum. Failure to apply sampling weights to the data may result in biased population estimates.

ii. ***Nonresponse Weight.*** In PRAMS, four ethnic minorities are oversampled, to increase their numbers for analysis in this survey. Survey response rates vary by sampling stratum. The nonresponse weight is the ratio of the sample size in a stratum-specific response category to the number of respondents in the same category. The rate of response within a given stratum determines the magnitude of adjustment for nonresponse. Nonresponse weighting is conducted by increasing the weight of respondents that are similar to nonrespondents on known birth certificate information. From previous analyses of the 1993-1994 Washington State PRAMS survey, even after nonresponse adjustment is performed, PRAMS estimates may underestimate population risk for some measures because higher-risk women are less likely to respond even within groups distinguished by nonresponse.

Frame Noncoverage Weight. Each year, Washington State sends the calendar year birth tape to CDC where it is compared to the frame files for that given year of births. Frame noncoverage weights are created to adjust for omission of birth records in the sampling frame. The effect of the frame noncoverage weight is to ensure that the totals estimated from the sample data are similar to the totals from the birth tape.

Estimating Standard Errors for PRAMS Data

The standard error is a measure of the average deviation of summary statistics (means, proportions, rates) around their mean.[3] Differential probabilities of selection increase the sampling error when estimating population parameters over aggregated sampling strata.[2]

To account for the complex sampling design of PRAMS, the Washington State Department of Health and the CDC recommend using the statistical software packaged “Software for Survey Data Analysis" (SUDAAN). SUDAAN was developed by the Research Triangle Institute in collaboration with the National Center for Health Statistics and other Public Health Service agencies. It uses first-order Taylor series approximations to calculate sampling variances and standard errors for the population estimates.[4] Standard errors are used to calculate 95% confidence intervals (CI = percentage $\pm$ (1.96 * standard error)).[1,4]

In the 1996-1998 Washington State PRAMS Surveillance Report, 95% confidence intervals are presented for all population estimates. Confidence intervals that overlap indicate that the sampling values of the strata being compared are not statistically different from each other, and are unable to support inference that the population estimates of those strata are in fact different.[2]

Confidence intervals estimate the range of values, which includes the true population estimate for that indicator.[1,4] However, confidence intervals can not be used to determine other possible sources of bias in an estimate, such as non-response bias, recall bias, failure to understand questions, and socially approved response bias.[2]

Recall Bias

PRAMS data are self-reported and are based on events and feelings of women surveyed that may have occurred more than a year prior to the implementation of the survey. Recall bias may occur if the respondents do not accurately remember prior events. Events that occurred before conception or early in pregnancy will tend to be more misreported than events that occurred near to the time that the PRAMS survey was completed. Survey respondents may also be less likely to report or deny socially disapproved behaviors (e.g. smoking and drinking during pregnancy) in order to minimize their involvement with this risk behavior. Therefore, PRAMS data regarding smoking and drinking behaviors may be underreported as most pregnant women are warned about the effects of exposing the fetus to tobacco and alcohol.[2]

References:

[1] Pregnancy Risk Assessment Monitoring System (PRAMS): CDC Model Surveillance Protocol 1999. Maternal and Child Health Assessment Section, Community and Family Health, Washington State Department of Health, 1999.

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Table 7.1: Survey Response Rates

Washington State PRAMS 1996-1998

Maternal Characteristics[a]	Total Surveyed	Respondents (N)	Respondents (%)	Non-Respondents (N)	Non-Respondents (%)
Total	8,563	6,034	70.5	2,529	29.5
Maternal Age					
<20 years	1,431	1,021	71.3	410	28.7
20-24 years	2,325	1,557	67.0	768	33.0
25-34 years	3,992	2,876	72.0	1,116	28.0
35+ years	813	579	71.2	236	28.8
Missing	2	1	50.0	1	50.0
Race/Ethnicity					
White	1,712	1,410	82.4	302	17.6
African American	1,551	969	62.5	582	37.5
Native American	1,970	1,252	63.6	718	36.5
Asian/Pacific Islander	1,713	1,208	70.5	505	29.5
Hispanic	1,617	1,195	73.9	422	26.1
Missing	0	0	0.0	0	0.0
Maternal Education[b]					
<12 years	2,095	1,323	63.2	772	36.8
12 years	2,449	1,717	70.1	732	29.9
>12 years	2,923	2,331	79.8	592	20.3
Missing	1,096	663	60.5	433	39.5
Marital Status					
Married	5,114	3,842	75.1	1,272	24.9
Unmarried	3,433	2,181	63.5	1,252	36.5
Missing	16	11	68.8	5	31.3
Medicaid Status					
Medicaid[c]	4,874	3,201	65.7	1,673	34.3
Grant Recipients[d]	1,955	1,137	58.2	818	41.8
Medicaid Only[e]	1,845	1,266	68.6	579	31.4
Medicaid Expansion[f]	1,074	798	74.3	276	25.7
Non-Medicaid[g]	3,658	2,817	77.0	841	23.0
Missing	31	16	51.6	15	48.4
Birthweight Status (grams)					
Low Birthweight (<2500 g)	541	355	65.6	186	34.4
Normal Birthweight (≥2500 g	8,000	5,664	70.8	2,336	29.2
Missing	22	15	68.2	7	31.8

[a]Maternal Characteristics: age, race/ethnicity, education, marital status, baby's birthweight obtained from Washington State birth certificates; Medicaid status from linkage with Washington State First Steps Database; Prenatal Care Sites from PRAMS. White includes other/unknown (3.5%).

[b]10% or more of the Maternal Education data is missing from birth certificate data.

[c]Medicad - women in Grant Recipient, Medicaid Only, and Medicaid Expansion groups.

[d]Grant Recipients - very low income women eligible for cash assistance and Medicaid.

[e]Medicaid Only - low income women eligible for Medicaid only. This group includes women not eligible for cash assistance.

[f]Medicaid Expansion - women eligible for Medicaid with incomes at or below 185% of the federal poverty level, but not in the Grant Recipients or Medicaid Only groups.

[g]Non-Medicaid - women with incomes above 185% of the federal poverty level, and women who had not applied for Medicaid.

Trend Data

In Table 8.1, results from questions that were asked in both Phase II (January 1994 through March 1996) and in Phase III (April 1996 through December 1998) of the PRAMS questionnaire were compiled to provide trend data.

Table 8.1: Trend Data for Selected Indicators

Washington State PRAMS 1994-1998

	1994 (% Yes)	1995 (% Yes)	1996 (% Yes)	1997 (% Yes)	1998 (% Yes)	1994-1998 (% Yes)
Pregnancy Intention						
Unintended Births[a]	38.7	39.0	38.5	36.6	38.1	38.2
	(+1.9)	(±1.8)	(±1.7)	(±1.7)	(±1.7)	(+0.8)
Prenatal Care						
Pregnancy Status Confirmed by a Test or Doctor or	95.7	95.4	96.1	96.0	94.2	95.5
Nurse in the First Trimester	(+0.7)	(±0.7)	(±0.6)	(±0.7)	(±0.8)	(+0.3)
Had First Prenatal Care Visit in the First Trimester	77.6	75.4	78.2	77.7	77.3	77.3
	(±1.5)	(±1.5)	(±1.3)	(±1.4)	(±1.4)	(±0.6)
Received Prenatal Care as Soon as Desired	82.0	81.4	82.1	81.0	80.6	81.4
	(±1.5)	(±1.4)	(±1.3)	(±1.4)	(±1.3)	(+0.6)

[a]Unintended births is defined as women who wanted to be pregnant later (mistimed) or did not want to be pregnant then or at any time in the future at the time of pregnancy (unwanted).

Summary of Results:

From 1994 through 1998, there was no significant change in the proportion of women who reported their pregnancy was unintended at the time of conception, their pregnancy status was confirmed by a test or doctor or nurse in the first trimester, their first prenatal care visit occurred in the first trimester, or their prenatal care services were received as soon as desired (Table 8.1).

Technical Notes

Below are the topics covered in volume one through four of the 1996-1998 Washington State PRAMS Surveillance Report:

Volume I

- ❒ Folic Acid Awareness
- ❒ Pregnancy Intention and Birth Control Use
- ❒ Prenatal Care
- ❒ Hospital Stays for Labor and Delivery
- ❒ Breast-feeding

Volume II

- ❒ Tobacco Use/Infant Exposure
- ❒ Alcohol Use
- ❒ Illegal Drug Use

Volume III

- ❒ Health Care Provider Discussion of Maternal Risk Behaviors

Volume IV

- ❒ Infant Safety
- ❒ Infant Sleeping Position
- ❒ Stress and Social Support
- ❒ Domestic Violence

States Participating in PRAMS from 1996-1998

Alabama	Louisiana	Washington
Alaska	Maine	West Virginia
Arkansas	New Mexico	
Colorado	New York (excluding NYC)	
Florida	North Carolina	
Georgia	Oklahoma	
Illinois	South Carolina	

For more information on PRAMS programs in other states, please contact the Centers for Disease Control and Prevention (CDC) at:

http://www.cdc.gov/nccdphp/drh/srv_prams.htm.

Web Sites

For more PRAMS information: see the CDC PRAMS Web Site:

http://www.cdc.gov/nccdphp/drh/srv_prams.htm

For more Washington State PRAMS information:

http://www.doh.wa.gov/cfh/prams/

Note: The Washington State PRAMS Surveillance Report – Volume I will be available at this website by November 1, 2001.

Washington State Department of Health Web Site:

http://www.doh.wa.gov/